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McKINSEY- GENERAL FOODS STUDY



“The Economics of Food Distributors”

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This study has been made as a service to the grocery industry—to contribute to greater efficiency and effectiveness in all companies engaged in producing and distributing products through retail grocery stores.



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McKinsey & Company, Inc.

Management Consultants

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September 7, 1963

Mr. C. W. Cook
President
General Foods Corporation
White Plains, New York

Dear Sir:

With this letter we are submitting our report on the economics of food distributors. As you know, this report grows out of an extensive study in this area, which we have conducted under the sponsorship of General Foods. Since the value of the report is enhanced by a clear understanding of the origin and purpose of the study and how it was conducted, these points are covered in this letter.

Background of the Study

This examination of the economics of food distributors grew out of a review we made in 1962 of relationships between manufacturers and distributors.* In that study, which was sponsored by the National Association of Food Chains, we identified as one of five major opportunities for improving relationships the need for each party to gain a better understanding of how the other generates his profits. We concluded that such an understanding was essential because, over the long term, neither manufacturers nor distributors could be profitable unless both were profitable. Moreover, we felt that a better understanding of the distributor's economics would help grocery manufacturers to identify areas where profits could be improved through joint action. Thus, such an appreciation represented in our view a prerequisite to an effective program aimed at strengthening relationships.

* - Opportunities to Improve Relations between Chains and Manufacturers, October 1962, a report prepared by McKinsey & Company, Inc., for the National Association of Food Chains.

General Foods' decision to sponsor a study - as a service to the industry - was based on a desire to contribute to such an understanding. This report is the result of that decision.

Conditions for

Conducting the Study

Since this report will be read by a wide variety of people, most of whom were not involved in the conduct of the study, it is important to point out the basis on which it was carried out.

Our charter from General Foods was a very simple one: you underwrote the cost of the study but we had complete freedom to decide the scope and approach to the project. Thus, we were completely free to choose the participants and to select questions for analysis and inclusion in this report.

Although we have reviewed our progress with you during the course of the study, the purpose of those reviews was merely to keep you informed on its direction. We did not, as you know, inform you as to which distributors we were working with or communicate any privileged information about their operations.

Finally, our report has been written from our special vantage point as objective observers. It represents the situation as we found it, without regard to the specific interests of either side, or of any individual company (including General Foods). Moreover, in writing the report, we have done everything possible to prevent its being used to promote the unique interests of any company or group.

Thus, in every sense, the contents of this report, its methods, and its language, are ours.

Purposes of the Study

While in general this study has been intended as a follow-up to our 1962 report, it has been directed toward four specific objectives:

¶ To take some important, though preliminary, steps in providing manufacturers with a clearer understanding of how food distributors make money

¶ To present for consideration by the trade some new perspectives and different ways of looking at the economics of their business

¶ To stimulate through this report a continued and more meaningful dialogue between distributors and manufacturers

¶ To pave the way for and encourage other studies relating to the economic aspects of food distribution.

Approach to This Study

In conducting this study of distributor economics, we began in one major chain in order to deal with an integrated retail and wholesale operation. The management of this chain gave us complete access to detailed profit-and-loss data - overall and for over 200 individual retail outlets. This enabled us to narrow the scope of the study and determine its direction - using actual operating data - before extending our work to other distributor organizations.

As our analytical work developed, we extended it to a second major distributor operating in a different section of the country. This gave us an opportunity to validate our original work and to see how importantly a different set of competitive conditions and operating methods would affect economic results - or suggest new analyses.

In working with both distributors, we drew heavily on their personnel to help us interpret findings and validate conclusions. At this point, we also disclosed our detailed findings to a third distributor who operates a smaller organization. And we presented our preliminary findings to executives of two leading voluntary wholesalers to determine their application to that set of operating conditions.

Finally, we held review meetings with the management groups of four additional distributor organizations, and discussed the study's findings individually with a number of executives of still other distributors. On the basis of these reviews, we modified and extended certain aspects of the study to increase its usefulness.

Thus, while our report is largely based on the operating data of two distributors, it has been checked in some depth against the data and experience of a large number of additional operators.

Scope of the Study

From the outset of the study, it was apparent that it would have to deal with selective aspects of distributor operations. We have chosen to concentrate on those issues that seem to us to have the greatest impact on profits. Moreover, it would not have been economically feasible for us to work with enough individual

distributors to produce a set of data that would be representative of all distributors in all sections of the country.

Thus, working closely with our cooperating distributors, we have arbitrarily selected those aspects of distributor operations that are central to an understanding of the distributor's fundamental economics. And the specific cost, sales, and profit data shown are representative only of the distributors we actually studied.

Despite these limitations, the process of reviewing our findings and conclusions with a wide sample of distributors convinces us that - aside from the specific data - much of what we found is characteristic of a large portion of the grocery trade. Thus, we believe that the insights developed, the conclusions drawn, and the approaches used are sufficiently representative to be of real value. And we are convinced that the value of using specific data from actual operations more than offsets the risks of overgeneralizing.

As with our earlier study of distributor-manufacturer relations, we hope that the necessarily limited scope of this study will stimulate thinking and generate interest in further investigation. For we are convinced - as an outgrowth of working on this study - that further research into distribution economics is not only a major profit-improvement opportunity, but is a requirement for the survival of many companies now in the business.

Audience for This Report

The primary audience of the study is the decision-making echelon of distributors and manufacturers. For they are the ones who will have to decide what action to take as a result of our findings and recommendations.

Clearly, this is a broad audience - with diverse interests. On the one hand, we want to present to manufacturers a constructive picture of distributor economics and what they might do to improve them. On the other hand, we need to make the report meaningful to distributors by developing some fresh insights into their business.

Thus, while we expect our audience to be varied, we have also presumed one unifying bond: we have written essentially for top-management readership. For this reason, much detail on methodology and a great deal of backup material and analyses have been omitted from this document. We have included what we believe is sufficient technical information* for the reader to understand completely the methodology of our analyses, but we have not attempted to make this a technical treatise.

* - Some of it in appendixes to the report proper.

Reading This Report

Although each reader will obviously have his own special interests in the various subjects that are covered, we would point out that in reviewing this document with several people in the trade, two points became clear. First, the material does not lend itself to casual skimming. It must be read, even studied. Much information is illustrated in charts and tables, but by themselves this graphic material is at best incomplete and at worst misleading. Thus, we would urge a careful reading and quite likely a rereading of this report if its full value is to be gained. Second, the report needs to be read in sequence. While the several chapters each deal with separate subjects, the material does build on itself and certain common threads do run throughout the narrative.

Organization of the Report

The material that follows is organized in five sections:

- 1 - The Need for a New Perspective
- 2 - Store Development Strategy - A Key to Future Profits
- 3 - Profit Implications of Store Operating Policies
- 4 - Product Profitability and Its Application
- 5 - A Look Ahead.

* * *

This has been an extremely interesting and challenging study for us to work on. Our enthusiasm has been increased by the excitement of the discussions of this material with the trade. If the report serves only to stimulate continued contacts between distributors and manufacturers and to spark more intensive analysis of subjects of common interest, our hopes will be realized.

In closing this letter, we want to acknowledge the invaluable contribution to the study that was made by a large number of distributors - at top-management levels and operating levels alike. While it is not appropriate to name all of the companies or individuals with whom we worked (there were nine distributor organizations in all), we would like to make a special acknowledgement of the assistance we received from James Cooke, the current President of the National Association of Food Chains; Paul Cupp, past President of NAFC; Paul Cifrino, Chairman of the Program Committee for the 1963 NAFC Convention; and Clarence Adamy, Executive Vice President of NAFC. These men spent substantial amounts of their personal

time in the course of this study. It is only because of their assistance and that of numerous other distributor executives that this study was made possible, and their contributions represent the key reason for our hope that this report will make a major contribution to more effective working relationships between grocery distributors and manufacturers.

Respectfully submitted,

McKinsey & Company, Inc.

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The Need For A New Perspective

FOOD DISTRIBUTION in the United States has achieved a level of efficiency and effectiveness unparalleled in the world. In a major way, the food industry, and particularly its distributive segment, has helped the American consumer to reach his unmatched standard of living. Leaders of this industry have attained prominence, not only as adroit merchandisers, but also as skillful managers of some of the country's largest businesses.

Why, then, a study of the economics of food distribution? Why examine the profit-making mechanics of an industry that serves as a model of efficiency to the rest of the world? The answer lies in the sentiment widely expressed in numerous discussions we have had with trade leaders: Food retailing today is in a new era. The industry has passed from a period of fairly easy prosperity to a time of fierce competition. The "build and grow" boom that was stimulated by growing and shifting populations, rising income levels, and conversions to supermarkets in the early 1950s has long since run its course.

SIGNS OF MATURITY

In recent years the boom has been replaced by:

☞ **A slowdown in growth:** Food sales are still increasing—but at an ever lessening rate. Aggregate figures for 34 companies show that a 10.2 percent increase in sales in 1956 (against the preceding year) tailed off to a 4.1 percent gain by 1960.*

☞ **"Overstoring":** Perhaps the best measure of this well-recognized condition is the fact that the U.S. population per supermarket fell from 9,300

to 5,700 between 1958 and 1961.* In other words, a supermarket—on the average—had only 60 percent as many potential customers in 1961 as it had in 1958. And this problem is aggravated by the emergence of new forms of competition, principally food discounters.

☞ **Rising wage rates:** Between 1955 and 1961, supermarket wage rates have been rising an average of 5.8 percent a year. At the same time, labor productivity has been increasing at a much slower rate (2.2 percent a year).* This disparity means that operating efficiency must be further increased if the distributor is to stave off unwanted price increases.

☞ **Lower profitability:** Food retailing shows a declining trend in earnings. The return on net worth of chains studied by the Harvard Business School decreased in each year from 1956 to 1961, starting at 14.40 percent and winding up at 11.25 percent.

These are the unmistakable symptoms of a maturing business, and countless leaders of *this* business have made it clear to us that in their view the need is now urgent to think hard and long and differently about the economics of food distribution. In fact, many of them are doing just that. Their objective goes beyond mere self-improvement; it includes the economic enlightenment of their suppliers as well—who in many ways importantly affect a distributor's profitability.

MANAGEMENT ACTION IN A MATURE BUSINESS

Many industries in the United States have been

* Source: Super Market Institute.

buffeted by the forces now besetting food distribution. Some have responded well and have adapted themselves to their unwanted—though often self-induced—condition. In these industries positive management action has been the key to arresting the decline in profitability.

In recent years, many food distributors have sought by a variety of means to combat the profit squeeze in which they find themselves. Most have diversified their operations by moving into other forms of retailing such as soft goods and drugs. Some have become substantial real estate developers. Others have integrated backward—not only into manufacturing but also by playing a larger role in the distribution of items previously delivered to their stores by the manufacturer. And virtually every grocery store operator has increased his efforts to cut costs of all types.

All of these actions, of course, have helped distributors—particularly the outstanding ones—to withstand the intensifying downward pressures on profits. But it became quite clear during our study that this battle is still in its early stages. For, looking ahead, we see nothing on the horizon that will lessen these profit pressures—in fact, all signs point to their increase.

Thus, we conclude that grocery distributors—like many other segments of American industry—must pay greater attention to a few relatively well-established steps that represent sound action in an economic environment such as the one in which they are now competing. Such steps include:

- ☛ More selective evaluation of new investment opportunities to make certain that each one stands on its own economic merit and that the company's return on investment is strengthened, not diluted.

- ☛ Careful analysis—in advance—of the economic implications of key policy changes so that facts, not intuition alone, can be used to reach sound judgments.

- ☛ Reappraisal of traditional ways of doing

things—of organizing, of selling, of promoting, of developing people, of even thinking about the business. Often this reappraisal leads to thinking more in terms of net profit and return on investment and less in terms of volume.

Clearly each of these steps imposes a requirement on management to pay increasing attention to the economics of their business. For these actions demand greater emphasis on facts, analysis, and exactness. And they require a solid understanding of the specific impact on profits of each activity or function carried on in the business.

So in this study, we have taken a first cut at analyzing and describing the factors that underlie profitability in food distribution. We have looked at three of the most important aspects of the management function in food retailing: planning for new stores, formulating operating policies for stores, and managing the thousands of products carried in each store. Each of these aspects is treated in the following chapters.

Chapter 2, dealing with *store development*, analyzes the effect of store location and store size on profits. Thus, this chapter ties in with the first action step described above—more selective evaluation of new investments.

Chapter 3 evaluates the influence of certain *operating policies* on profitability. The policy areas studied include, among others, pricing, labor expense control, and inventory management. This chapter relates directly to the second action step required in a maturing business—rigorously analyzing changes in key policies before they are made.

In Chapter 4, dealing with *individual products*, the actual handling costs for a range of dry grocery items are calculated. This chapter not only describes the development of these costs but also discusses how a knowledge of these costs can be applied. This chapter closely parallels the third action step listed above—challenging traditional ways of thinking and doing.

Store Development Strategy— *A Key to Future Profits*

WHILE much has been written on planning the development of new stores, very little has been published on the actual effect these decisions exert on profits in real-life competitive situations. Hence, as a first cut at the subject of distributor economics, we wanted to find answers to such questions as:

- ☛ Exactly how does the number of competitors affect a store's profits?
- ☛ How much of a premium can a retailer afford to pay for a particularly convenient location?
- ☛ How much does the distance of a store from its source of supply affect its profits?
- ☛ What is the penalty—in profit dollars—of building a store too large for its market?

Early in the study, we concluded that factors overriding the impact of efficient store operation must be at work on distributor profits. These factors logically seemed to be the location and size of the store in relation to competition—factors that are evaluated when plans for a new store are first drawn up and that are then lived with from that point forward. The likelihood of such forces being at work was driven home for us when we examined the profit performance of over 200 stores of one large distributor and 150 of a second one. This examination disclosed surprisingly little relation between profits and the trade's commonly used measures of operating efficiency—i.e., sales per man-hour, ratio of labor expense to sales, sales per square foot, etc.

In seeking to quantify the profit influence of a

store's location and size on its profits, we will—in this section—be discussing a number of propositions that distributors have known or suspected to be true for some time. Until now, few operators have really known *how* important these factors are in quantitative terms. And the actions of many operators still seem to run consistently contrary to these almost axiomatic conclusions. By quantifying the impact of these activities and decisions, the distributor can determine how much he can profitably spend—in dollars and effort—to improve his performance in these areas. Moreover, we are convinced that even the sophisticated reader can benefit from fresh thinking about long held beliefs on the importance of planning for the development of new stores.

WHAT WE DID

To dig more deeply into this subject, we selected 66 of the over 350 stores in our sample for analysis in depth. These 66 units represented a cross section of urban, suburban, and rural locations; covered a range of sizes and profitability; included both free-standing and shopping-center sites; and—as might be expected—were operated under varying intensities of competition. For each store, we determined annual volume, annual net profits and square footage of sales area. Every supermarket competitor in each store's trading area* was then identified.

* For urban locations, we assumed a trading area of ½ mile around each store; for stores in suburban or rural locations a trading area of 2 miles was assumed.

The annual sales of these competitive supermarkets were estimated, chiefly by store supervisors and other management people in the two chains with whom we worked. Sales areas of competitors' stores were also estimated.

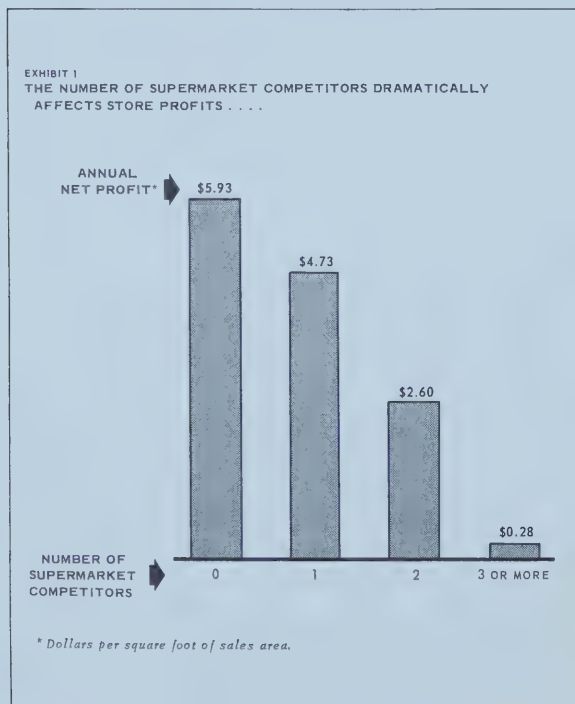
Putting all of these data together, we developed two series of interesting and often dramatic conclusions: the first dealing with the effect of location and the second covering the impact of size on store profitability.

PROFITABILITY AND A STORE'S LOCATION

The Number of Competitors

The sheer number of competitors confronting a store has a dramatic influence on its profits. Just how significant this influence can be is vividly demonstrated by Exhibit 1, which shows our 66 stores categorized by the number of competitors they face. In 1962, those stores with no competitors in their trading areas enjoyed net profits per square foot* more than 20 times those of stores with three or more competitors. Even those units with two

* Net profits per square foot were selected as a measure of profitability that fairly accurately represents a return-on-investment index of store performance.



competitors showed nearly 10 times the profits of those with more than two.

Admittedly, the profits of a store built in a trading area with little competition are vulnerable to the opening of new units. But, even with an allowance for this likelihood, this simple relationship—for the two chains involved in the study—raises some red flags about new-store construction. Particularly, it casts doubt on a policy—seemingly followed by some distributors—of building stores simply for the sake of representation or of denying a location to a competitor.

We are not saying that a distributor presented with similar data should never build a store where he had or could soon expect to have three or more competitors. But we would suggest that a distributor confronted with the circumstances of our sample should have some very explicit and important reasons for putting up such a store.

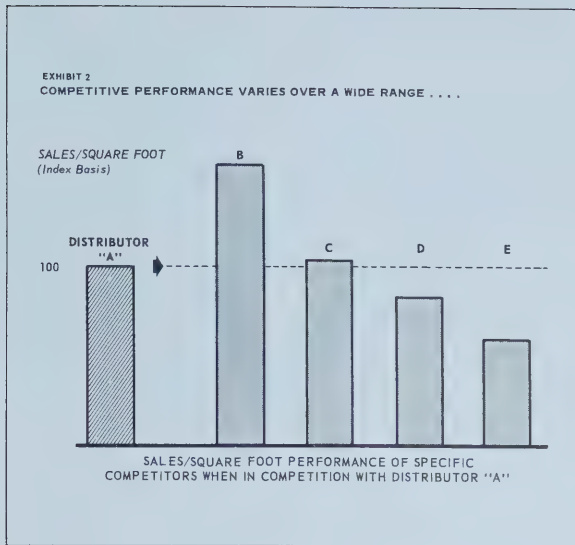
As a by-product of this analysis, one rather startling conclusion emerged: One of the distributors studied was consistently competing against himself. By oversaturating even high-potential markets, this operator had sharply cut into the profitability of his individual stores.

Significance of Specific Competitors

Having "priced out" the effect of the sheer number of competitors on our sample stores, we next examined the effect of specific competitors. For simplicity's sake in presenting the results of this analysis, we have chosen one of the distributors (A) and have graphed its sales per square foot** compared with those of four other operators. (See Exhibit 2, in which Distributor A's performance is shown on an index basis, always at 100.)

What we found was striking. On the average, one competitor (B) outperformed Distributor A by nearly 50 percent. On the other hand, when competing against two other distributors (D and E), Distributor A turned in consistently superior performance. When Distributor A met C head on, the results—on the average—were a standoff. (In each comparison, A was competing against the other distributors in at least 10 locations.) Since it is un-

** Sales per square foot, rather than net profits per square foot, were used as the performance measure in this analysis simply because of the difficulty of estimating the profits of competitors' stores. Sales, as mentioned earlier, were estimated by store supervisors and other management personnel of the two distributors participating in the study.



likely that Distributor A would consistently have better locations than Distributors D and E and poorer locations than Distributor B, and since none of the distributors operated unusually large or small stores, this chart reflects—at least in some measure—differences in the effectiveness of merchandising programs.

During our study, this simple graphic representation of competitive performance sparked the management of Distributor A to analyze more carefully the reasons for its poor record against B. Consumer research disclosed that Distributor B had preempted a low-price image in its market areas (even though its overall price levels were actually no lower than Distributor A's). This has led A to revamp its pricing, promotional, and advertising strategies. It is too early, of course, to measure the lasting effect of these changes, but results so far are encouraging.

We believe this kind of analysis might be useful in selecting new sites, particularly where competitors are already established or where distributors have alternative opportunities from which to choose. For example, where possible, Distributor A would certainly want to stay away from Distributor B's stores. However, it might look very favorably on sites where D or E represented the existing competition.

A Convenient Location

Since convenience is a relative matter, we ad-

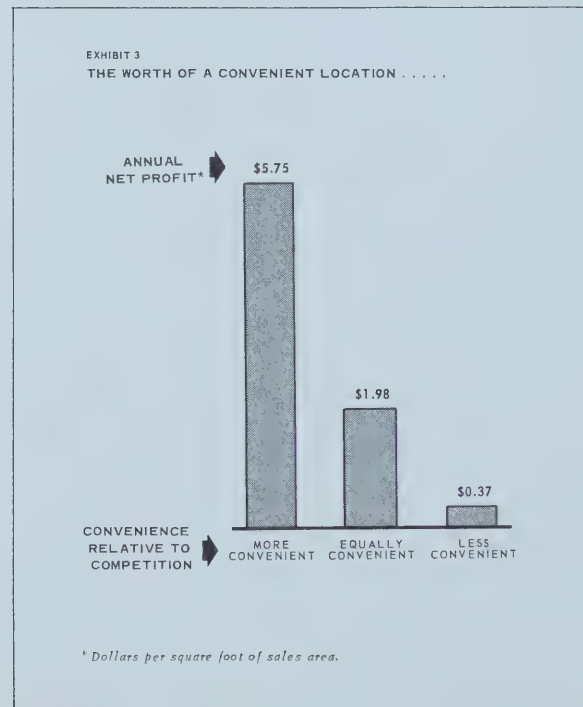
ressed ourselves to the convenience of the 66 stores in our sample vis-a-vis competition. We could not measure convenience numerically, so we evaluated it subjectively; but we used the same yardsticks for all stores involved. These yardsticks were:

1. The adequacy of parking facilities
2. The accessibility of the site with respect to traffic flow
3. The location of the store relative to population patterns in its trading area.

Each of the 66 stores and each of their competitors were judged good, average, or poor on each yardstick. On the basis of these evaluations, each store was placed in one of three categories: more convenient than competition, equally convenient, or less convenient than competition. We then calculated the profit results for the groups of stores in each convenience category. The results appear in Exhibit 3.

The key point in this exhibit is the magnitude of the difference in profitability. Those stores that were clearly more convenient had nearly 16 times the profit of locations ranked as less convenient.

The significance of this finding relates again to yardsticks used in selecting new store locations. For



example, it suggests that the premium cost usually attached to a convenient site may very well be worth-while. Additionally, it suggests the probable folly of locating new stores in inconvenient locations just to achieve representation or to shut out a competitor.

* * *

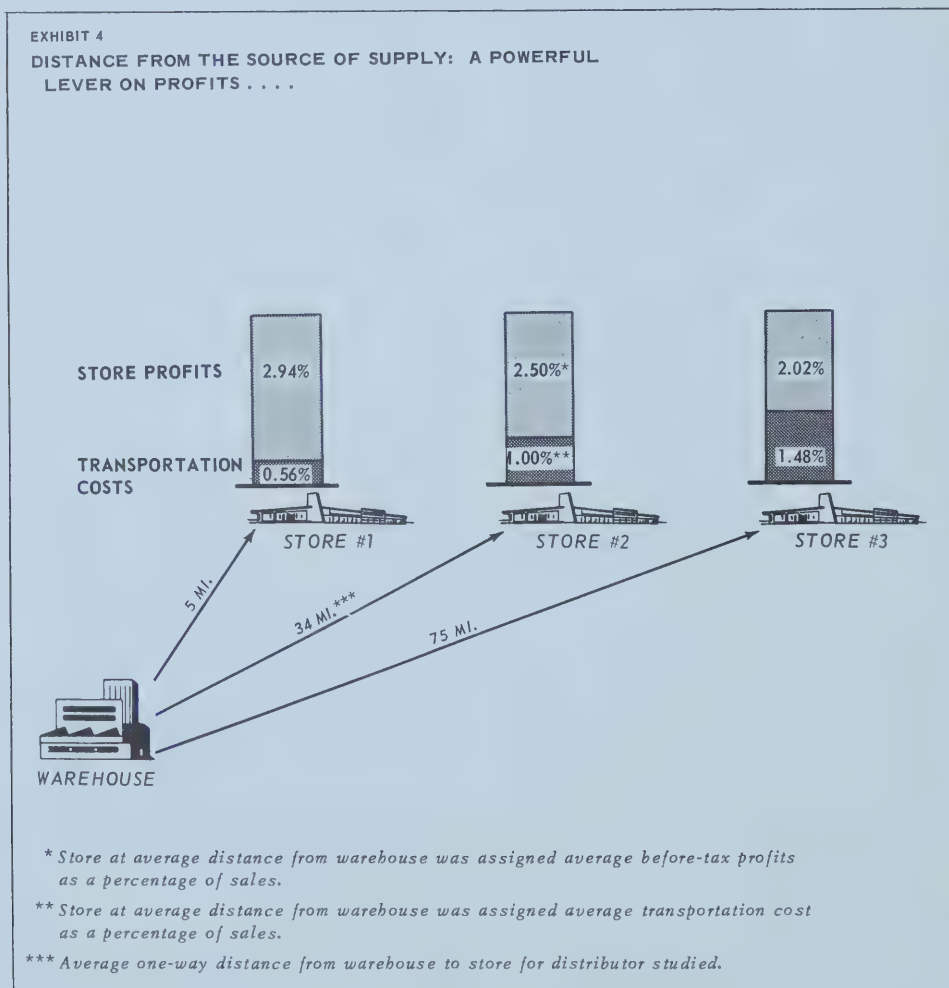
The three charts just discussed represent the kind of insights into the importance of store location that can be gained from relatively simple analyses. Interestingly enough, while a few distributors now make these kinds of studies, most of those with whom we talked do not. In our judgment such studies can be well worth the effort required.

Distance from Supply Source

Clearly, the location of a store in relation to its source of supply will affect transportation costs, and these in turn will affect profits. But by how much? Our analysis shows that the effect can be dramatically large, even though a distributor's overall transportation costs might average only 1 percent of sales.

To tie down and quantify this point, we selected three stores of one distributor from among our sample of 66. These units were similar in all respects except their distance from the warehouse. One was 5 miles away, another 34 miles,* and the third 75 miles.

*The average distance between distributor's warehouses and outlets.



To isolate the effect of transportation costs on profit, we took Store No. 2 (the one located at the average distance from the source of supply) as our starting point. If we assumed that Store No. 2 incurred the company's average transportation cost as a percentage of net sales (1 percent), we could calculate the lower and higher transportation-cost percentages of the near and far stores (Nos. 1 and 3) respectively. Then we could see how these cost percentages affected each store's profit. A step-by-step description of our calculations follows.

1. Trip-cost ratios: For each of the three stores, the cost of a single trip from warehouse to store and return was calculated. The ratio of these trip costs, one to the others, was:

	Distance		
	5 miles	34 miles	75 miles
Ratio of Trip Cost	0.56	: 1.00	: 1.48

2. Transportation cost as a percentage of net sales: By assigning the store with the average distance from the warehouse the company's average transportation cost as a percentage of net sales—1 percent—we calculated the transportation costs for Stores Nos. 1 and 3 by simply applying the trip-cost ratios. Thus, the near store's transportation cost was 0.56 percent of net sales and the far store's cost was 1.48 percent, over two and one-half times as large.

3. Effect of transportation cost on profit: By assigning average store profits—2.5 percent of net sales before income taxes—to Store No. 2, we could then find the profits of Stores Nos. 1 and 3 by adjusting the 2.5 percent in accordance with these stores' transportation-cost percentages. As can be seen in Exhibit 4, the near store's profit of 2.94 percent is half again as large as the 2.02 percent profit of the distant store.

The significance of our findings is not the obvious conclusion that it is cheaper to haul goods a short distance than a long distance. Rather it is the magnitude of the dramatic impact exerted on store profits by shipping costs. In our work, we found that the real magnitude of this impact is often obscured by distributor accounting practices, which frequently allocate transportation costs to stores at a fixed percentage of sales. When this happens, the profit of distant stores is often overstated,

and those stores are in effect being subsidized by the understated profits of the near stores.

Hence, while all distributors weigh transportation costs when they plan each new store, they may lose sight of these costs in their overall planning or in judging a store's worth after it is in operation.

For the growth-minded distributor, explicit recognition of this economic fact of life can and should substantially affect both the timing and the configuration of his expansion plans. It might force him to plan concentrations of store-building activity, particularly as he moves away from his established areas, so that he can rapidly build volume to a point that will support warehousing facilities. This factor then needs to be weighted with other considerations of planning store development in remote areas such as: the task of establishing an image with consumers, the question of how such stores are to be supervised, and the problem of securing choice real estate properties, to name a few.

PROFITABILITY AND A STORE'S SIZE

Having determined where a store is best built, the food distributor next faces the question of how big to build his unit. Store size is currently a much-debated issue in the trade. But a great deal of the heat generated by this debate stems from emotion and not fact. To get at some facts on store size, we returned to our sample of 66 stores.

How Important Is Store Size?

In our first analysis, we grouped the stores into those that were larger than competition, those that were about the same size, and those that were smaller. We excluded from this analysis eight stores which were built before 1950 so as to eliminate as far as possible the distortion caused by stores that were both old and small. Profit results were calculated, and we found that stores that were clearly smaller than competition were at a profit disadvantage relative to those that were larger or about equal in size. As Exhibit 5 shows (page 8), larger stores were nearly 10 times as profitable, and those that were about equal in size were more than 6 times as profitable. We want to point out that it is not the advantages of scale alone that produce this effect. In our sample of stores, the eco-

EXHIBIT 5
COMPETITIVE SIZE ADVANTAGE: A POSSIBLE
PROFIT PLUS . . .



* Dollars per square foot of sales area.

**In measuring store size, differences of less than 1,000 ft² (sales area) were neglected

nomic leverage from spreading larger volumes over relatively smaller fixed costs is not great. Thus there is good reason to believe that the greater profitability of these specific larger stores is related to greater consumer preference for their merchandising methods, convenience, or other similar factors having, in some way, to do with their size.

Although Exhibit 5 shows the penalty in our sample of stores of being overshadowed in size by competition, it does not mean that larger stores are per se more profitable. In fact, to the dismay of many in the trade, the large store that has not been able to live up to its volume expectations has become the industry's white elephant. The following two analyses show that the real key to long-term profits is to match store size with achievable volume, not simply to build giant stores.

When Is a Larger Store More Profitable?

To get at this question, we departed from our sample of 66 stores and developed two hypothetical stores. One store has 11,000 square feet of selling area; the other has 13,000 square feet. In all other respects, they are similar—i.e., product mix, mar-

gins, etc. If we assume that both stores achieved \$3 sales per week per square foot and that both achieved industry-average profits, the smaller store would have annual profits of \$3.94 per square foot. The larger store would be narrowly more profitable at \$4.10 per square foot (4 percent increase), owing to the spreading of certain fixed costs, particularly store supervision, over greater volume.

By making two additional assumptions, however, we can develop some far more significant insights.

- ☞ If the smaller store attained the total volume projected for the larger unit—i.e., \$39,000 a week—its profits would *increase* 71 percent, to \$6.74 per square foot.
- ☞ If the larger store were only able to achieve the volume anticipated for the smaller unit—i.e., \$33,000 a week—its profits would be 56 percent *less* than the profits of the smaller store at that volume, or \$1.73 per square foot.

These comparisons, illustrated in Exhibit 6, underscore the economic penalty of building too large a store, and identify the achievement of higher than normal volumes as a point of real profit leverage.

To shed still greater light on the consequences of building too extravagantly (or, conversely, of failing to obtain estimated volumes), we next examined the effect on profits if the 13,000-square-foot store missed its projected sales by 10, 20, and 30 percent. As Exhibit 7 shows, missing sales estimates by 30 percent can bring tragic results; for at this point profits have been completely wiped out.

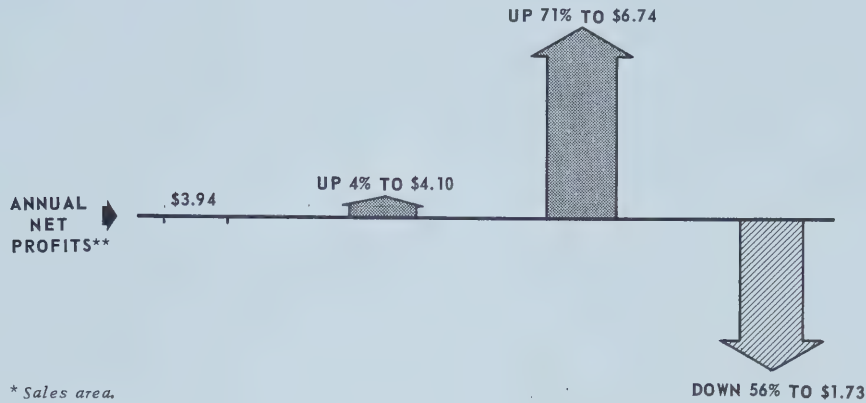
With *Progressive Grocer* reporting that 31 percent of all new stores in 1962 were below their forecasts by 10 percent or more—the figure was as high as 47 percent in 1960—this analysis raises serious doubts about the profitability of many recently constructed units. And it brings home the fact that a measure of conservatism in the sizing of new stores holds greater promise of reward than indiscriminate overbuilding.

WHAT DOES ALL THIS MEAN?

Perhaps the most important conclusion to be drawn from these analyses is that a store's profitability is heavily influenced by what happens before it opens. Once a distributor has decided where to put a store, and how big to build it, he has pretty well set at least the range of its future profits.

EXHIBIT 6
WHEN ARE LARGER STORES MORE PROFITABLE?

	<u>BASE CASE</u>	<u>ALTERNATIVE I</u>	<u>ALTERNATIVE II</u>	<u>ALTERNATIVE III</u>
STORE SIZE*:	11,000 Square Feet	13,000 Square Feet	11,000 Square Feet	13,000 Square Feet
SALES/SQ. FT.:	\$3.00	\$3.00	\$3.55	\$2.54
WEEKLY SALES:	\$33,000	\$39,000	\$39,000	\$33,000



* Sales area.

** Dollars per square foot.

EXHIBIT 7
THE PENALTY OF MISSING PROJECTED SALES . . .

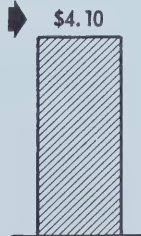
13,000 SQUARE FOOT STORE*

	<u>PROJECTED SALES</u>	<u>ACTUAL SALES</u>		
		<u>OFF 10%</u>	<u>OFF 20%</u>	<u>OFF 30%</u>
WEEKLY SALES:	\$39,000	\$35,100	\$31,200	\$27,300
SALES/SQ. FT.:	\$3.00	\$2.70	\$2.40	\$2.10

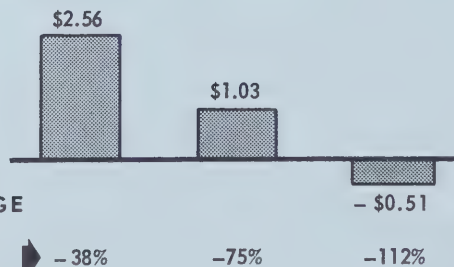
ANNUAL

NET

PROFITS**



PERCENTAGE
DECLINE
IN
PROFITS



* Sales area.

** Dollars per square foot.

These investment planning decisions of the distributor may appear to be outside the scope of manufacturer-distributor relations. But we believe it is important for the manufacturer to recognize fully the significance of these decisions if he is to gain a real understanding of how a distributor generates his profit. And in a very direct way, if any really significant trend toward smaller stores develops among distributors, the implications for the manufacturer would be very real. For example, smaller stores, because of greater space limitations, might well restrict the number of brands of a particular product that could be carried and might also affect the inventory policies and ordering procedures of distributors. In either case, manufacturers would be very much involved—immediately and significantly.

Some distributors, of course, are well aware of the economics of store planning. Yet the sheer

magnitude of the profit impact of these decisions indicates that most operators must be more rigorously analytical and selective in making future investments. Furthermore, these analyses suggest new approaches to managing existing locations. It may well be, for example, that a distributor should lead from strength—giving his greatest attention to locations where he has a strategic advantage while doing only whatever is needed to limit the losses where he is at a disadvantage.

In this study, we have just scratched the surface of these problems. The big opportunity lies in digging deeper into the questions raised by our analyses. Interestingly enough, the executives of one large chain—a consistent profit leader—attribute much of their fine performance to skill in store development and in turn state that these skills have largely been sharpened by a substantial investment in research into the issues covered in this section.

Profit Implications Of Store Operating Policies

DESPITE the crucial effect of decisions made before a store is built, there is, of course, a range of profitability that can be and is influenced by the way in which a distributor operates his store. In any business, one of management's fundamental responsibilities lies in balancing such interrelated factors as price levels, volume, product mix, costs, and assets in a way that will maximize return on investment. Thus, to the distributor, each one of

these variables represents an important operating-policy issue.

In getting at this subject, we wanted to find out what would happen to profitability if a distributor were to take such actions as these:

- ☞ Cutting average price levels 9 percent and doubling his volume.
- ☞ Raising prices 2 percent and losing 10 percent of his volume.

EXHIBIT 8

SUPERMARKET ANNUAL PROFIT-AND-LOSS STATEMENT

		Selected Percentages
SALES	\$1,500,000	100.0%
Cost of goods sold	1,170,000	78.0
Gross margin	\$ 330,000	22.0%
STORE EXPENSES		
Labor	\$120,000	8.0
Rent	22,500	1.5
Depreciation	7,500	
Maintenance	7,500	
Utilities	7,500	
Supplies	12,500	
Trading stamps	35,000	2.3
Miscellaneous	7,500	
	220,000	
Contribution to corporate costs	110,000	
Allocation of corporate overhead, warehousing, and transportation costs	72,500	4.8
NET PROFIT	\$ 37,500	2.5%

- ☞ Cutting shelf prices on fast-moving items and raising prices on slow movers.
- ☞ Shifting product mix to include a larger proportion of nonfoods.
- ☞ Reducing store labor costs 10 percent.
- ☞ Increasing inventory turnover.

WHAT WE DID

To answer these and similar questions, we first analyzed the profit-and-loss statements of over 350 stores. By examining these results in detail, we were able to describe a representative store.

As can be seen in Exhibit 8, the gross margin in our representative store is a fairly typical 22 percent. The net profit before taxes, but after an allocation of corporate costs, is also typical at 2.5 percent.

We next developed a simple model of this representative supermarket, designed in such a way that

we could analyze changes in profit resulting from changes in the policy variables discussed above. In order to do this, we needed to reflect the dynamic behavior of costs in the store. Thus, we identified those costs that were essentially fixed regardless of the store's volume (e.g., depreciation) and those that varied directly with changes in volume (e.g., trading stamps). The rearranged profit-and-loss statement in Exhibit 9 reflects this classification of costs.

The key element of cost that did not fit easily into one classification was store labor, which has both fixed and variable elements. For regardless of volume, there is a store manager, a meat manager, and a produce manager. These represent a fixed cost that will not change appreciably with swings in volume—up or down. However, in the operations in which we worked, by far the greatest part of store labor expense (grocery clerks, check-

EXHIBIT 9

REARRANGED PROFIT-AND-LOSS STATEMENT

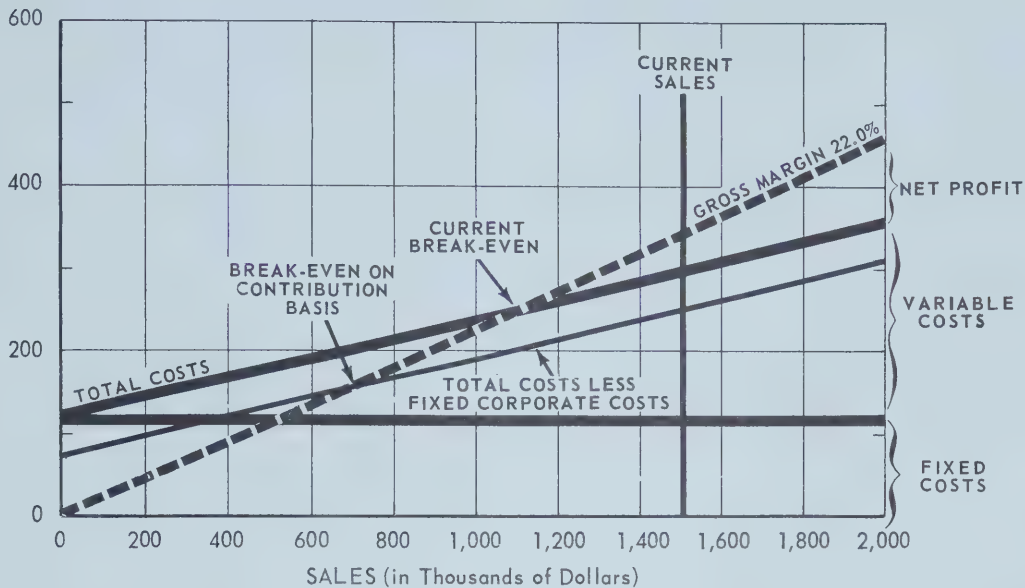
SALES		\$1,500,000
Cost of goods sold		1,170,000
Gross margin		<u>\$ 330,000</u>
VARIABLE STORE EXPENSE		
Labor	\$98,000	
Trading stamps	35,000	
Supplies	12,500	145,500
Contribution to store overhead and corporate costs		<u>184,500</u>
FIXED STORE EXPENSE		
Rent	22,500	
Depreciation	7,500	
Maintenance	7,500	
Utilities	7,500	
Labor	22,000	
Miscellaneous	7,500	74,500
Contribution to corporate costs		<u>110,000</u>
Allocated costs*		
Fixed	50,000	
Variable	22,500	72,500
NET PROFIT		<u>\$ 37,500</u>

*The fixed allocated costs include, for example, corporate management and staff functions, certain warehousing costs, etc.

The variable allocated costs include delivery and some warehousing costs.

EXHIBIT 10
SUPERMARKET BREAK-EVEN CHART

COSTS AND PROFITS
(in Thousands of Dollars)



out personnel, etc.) was variable and changed in amount as volume changed. Indeed some chains manage store labor costs by determining allowable man-hours for a week's operation to the nearest hour in terms of the anticipated volume for that week. Thus, in our profit-and-loss statement we have shown a large proportion of store labor expense to be variable and a small proportion to be fixed. (For stores that operate with different policies on the control of store labor expense, it is very easy to alter this assumption and explore the effect on net profit of a different labor control policy.)

ECONOMIC PROFILE OF THE STORE

Having thus rearranged our representative store's P&L, we can see several other economic characteristics that are worth noting. Its break-even point, as shown on Exhibit 10, is \$1,090,000 in annual sales, or 73 percent of present volume. (Break-even—for this purpose—is the point at which this store would earn no net profit but would cover its allocation of corporate costs.) Volume could drop off to \$640,000 before the store would fail to make

any contribution to corporate costs and would become an out-of-pocket loss for the operator. This very low out-of-pocket break-even point explains why some large distributors are able to keep open marginal, low-volume units, which would not appear to be profitable at first glance. In a large operation, a store's volume must shrink to very low levels before shutting it down makes financial sense.

The mix of products sold in our representative store and the respective gross margins of each category are shown in Exhibit 11.

EXHIBIT 11

MIX OF PRODUCTS IN OUR REPRESENTATIVE STORE.....

Category	Sales	Percentage of Total Store Sales	Gross Margin
Grocery*	\$1,005,000	67%	19.8%
Produce	120,000	8	32.0
Meat	375,000	25	25.0
Total	\$1,500,000	100%	22.0%

* Includes frozen foods (4% of total sales with a 27% gross margin) and nonfoods (5% of total sales with a 31% gross margin).

The dry grocery department of our representative store (excluding frozen foods and nonfoods) has 5,000 items with sales, gross profits, and margins shown on Exhibit 12 for three categories of movement (fast, medium, and slow). The data in this chart, while based on the actual data of one large distributor, have been modified slightly for ease of presentation.

Having developed this economic profile for our representative store, we next determined the profit implications of numerous operating policies with emphasis on the effect of changes in these policies on the store's profit. We have selected five of these policies for discussion:

1. Price management
2. Food discounting
3. Modifications in product mix
4. Store labor control
5. Inventory management.

PRICE MANAGEMENT

Of all the variables in the management of food stores, pricing clearly has the greatest and most

immediate effect on profits. The best evidence of the dramatic impact of prices on a distributor's profit is brought out in Exhibit 13. If our representative store reduces prices by 2 percent, its dollar profits drop by 80 percent. But if it raises prices by 2 percent (and as a consequence suffers a 10 percent volume drop), dollar profits rise by 29 percent. We know of very few businesses where such small changes in price can affect profits so critically.

This dramatic relationship underscores the importance of pricing as a management function. But during the course of this study, and through our other work with food distributors, we have been struck by the fact that pricing is seldom managed in a manner that befits its basic economic importance. In fact, it would be our observation that there is no other function in food distribution today with a greater disparity between economic significance and management attention.

The Present State of Pricing

As a consequence of this gap, many operators are unable to talk with conviction about pricing. Many

EXHIBIT 12

5,000 DRY GROCERY ITEMS HAVE VARYING MOVEMENTS AND MARGINS.....

Velocity	Number of Items	Percent of Total Items	Annual Sales Dollars	Percent of Total Sales Dollars	Gross Margin	Annual Gross Profit Dollars	Percent of Total Gross Profit Dollars
Fast (1 case/week and up)	500	10%	\$365,400	42%	15.1%	\$ 55,175	35%
Medium (1/12 case/week— 1 case/week)*	2,750	55	461,100	53	19.9	91,759	58
Slow (less than 1/12 case/week)*	<u>1,750</u>	<u>35</u>	<u>43,500</u>	<u>5</u>	<u>25.7</u>	<u>11,180</u>	<u>7</u>
TOTALS	<u>5,000</u>	<u>100%</u>	<u>\$870,000</u>	<u>100%</u>	<u>18.2%</u>	<u>\$158,114</u>	<u>100%</u>

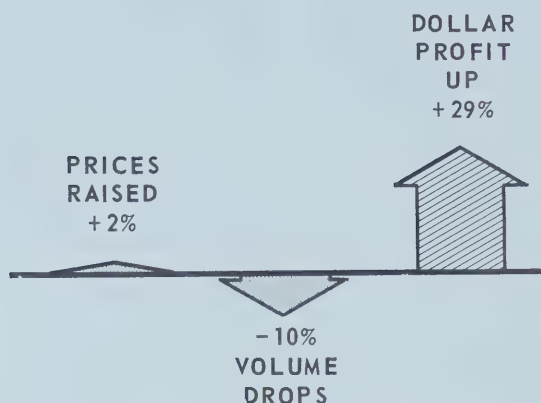
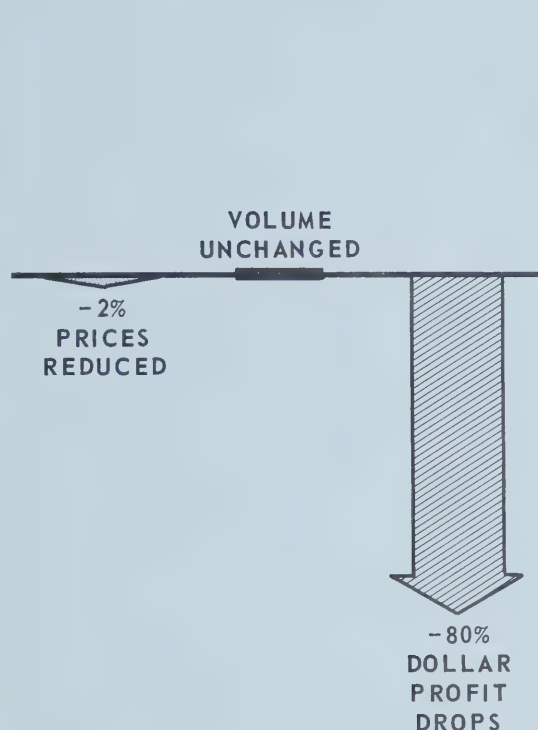
*A movement of 1/12 case per week is roughly equal to 2-4 unit sales per week. In our representative store with \$1,500,000 in annual sales, about half the dry grocery items stocked move at this pace or less.

NOTE: Does not include store-door-delivered dry groceries.

EXHIBIT 13

PRICE DROPS DEPRESS
PROFITS TREMENDOUSLY

PRICE INCREASE EVEN WITH
VOLUME LOSS CAN RAISE PROFITS



cannot state very clearly just what their pricing policy is. In other companies a pricing policy is thought to exist but only the president seems to be aware of it. For example, some organizations claim to be price leaders but in fact are not or they indicate they match competition but market basket studies show that they do not. (In some large distributor organizations, approaches to pricing presumably reflecting company policy are defined differently by different executives.) Even when pricing policies are clearly established, they frequently are not rooted in the simple economic realities depicted in Exhibit 13.

This prevalent confusion over pricing—which many trade leaders confirm—results in two seemingly conflicting price phenomena: imitation and rigidity.

☞ Distributor prices are highly imitative. Competitive prices on individual items are of course an important bench mark in setting shelf prices. But when blindly following competition becomes a substitute for hard thinking about pricing strategy—as it often does—it can lead to staggering losses.

☞ Rigidity of prices—wherein a distributor maintains identical prices in all stores of a particular division or warehouse area—seldom makes economic or competitive sense. We have observed some operators with a single price schedule for over 200 stores in a four-state area. Yet these stores were confronted by competition ranging from aggressive discounters to premium-priced, service-oriented local operators.

Both these characteristics—imitativeness and rigidity—can be traced to a lack of facts. As a general rule, the distributor does not have available information on profitability by department or category—much less does he know what it costs to warehouse, ship, and handle any one item. Thus he does not know, when he sets his prices, whether he is just covering costs, making a profit, or taking a loss. We do not for a moment believe that a retailer can or should price every item strictly in relation to his costs, but it would seem reasonable that he should know and consider this factor just as managements in other businesses do.

Nor does the distributor know nearly enough about how his customers are likely to react to prices and price changes. Logic and experience would both indicate that there is a threshold where the consumer becomes highly sensitive to prices—but where this threshold is, and on what items, is largely a matter of guesswork. There is, of course, the logical theory that the consumer is well acquainted with price levels on frequently purchased and heavily promoted items. But just how many (or how few) of the 5,000 or more items in a store are covered by this theory is still a big question mark. There is also the issue of the effect of price changes on one item on the movement of related items or of the product category overall. Again, knowledge of how the consumer reacts is very limited.

A precise knowledge of costs and consumer price-awareness requires research in depth into certain basic economic relationships and close attention on the part of skilled analysts—neither of which is provided in the typical distributor organization today. Furthermore, organizational responsibility for pricing is often fuzzy. Buyers set prices; so do people in store operations. With responsibility frequently diffused, some price matters inevitably fall between the chairs. In addition, just as the setting of prices is loosely organized, so is the review of prices. Many prices today are what they are simply as the result of applying margin percentage levels dating back 15 and even 20 years.

Some Questions about Pricing

As a practical matter, of course, each operator must look at his own business and his particular competitive conditions before he can take any steps to improve his management of the pricing function. In

taking this hard look, it is our judgment that any distributor must give serious consideration to such basic questions as these:

1. What price image are you trying to create?

The alternatives for a basic price image appear to be fairly limited, e.g., low prices across the board; competitive prices with good customer service; generally competitive prices with dramatically low weekend specials; high quality and high prices on perishables with competitive prices on groceries; etc. Do your day-to-day actions conform to and help implement your price strategy? What do your regular customers think about your prices? What about your occasional shoppers? Should your price levels be the same in all stores? Does your merchandising tend to reinforce your desired price image?

2. What are the economic implications of different pricing strategies that you might adopt?

Many operators have achieved surprising results by making changes in their current price levels. To illustrate this point, we need to refer back to the analysis of dry grocery sales and gross profits by velocity of movement for our typical store, shown in Exhibit 12. Using this data we have developed two hypothetical examples of different pricing strategies and have “priced out” their effect on margins and profits.

☞ In the first test case, we lowered the average price levels of the fast movers by 6 percent and assumed that as a result of this reduction, the store achieved a 20 percent gain in the volume of its fast movers and a 10 percent gain in the sales of its other dry groceries (the latter increase stemming from greater store traffic generated by the price cuts on the fast movers). The results of such actions, as shown in Exhibit 14—Case I, would be to increase the total dollar sales of dry groceries by about 11 percent. However, even on this increased volume, the gross profit dollars of dry groceries would be more than 3 percent less than our representative store now achieves. With additional expenses being incurred to handle the greater volume, the store’s net profits would be substantially diluted.

☞ In the second case, we again altered price levels—this time cutting fast movers on the average by 2 percent and concurrently raising the medium and slow moving items by 3 percent.

**CUTTING FAST MOVER PRICES CAN ERODE
GROSS PROFITS EVEN WITH SUBSTANTIAL VOLUME GAIN...**

EXHIBIT 14

Case I

Velocity	Present Annual Sales	Present Annual Gross Profit	Changes	New Annual Sales	New Annual Gross Profit
Fast	\$365,400	\$ 55,175	Prices —6% Volume +20%	\$412,171	\$ 39,901
Medium	461,100	91,759	Prices same Volume +10%	507,210	100,935
Slow	43,500	11,180	Prices same Volume +10%	47,850	12,298
	<u>\$870,000</u>	<u>\$158,114</u>		<u>\$967,231</u>	<u>\$153,134</u>
	Present Gross Margin 18.17%			New Gross Margin 15.83%	
	Sales:		Up 11%		
	Gross Profits:		Down 3.2%		

CHANGE IN PRICE STRATEGY MAY WIDEN GROSS MARGIN...

EXHIBIT 14

Case II

Velocity	Present Annual Sales	Present Annual Gross Profit	Change in Average Price Levels	New Annual Sales	New Annual Gross Profit
Fast	\$365,400	\$ 55,175	—2%	\$358,092	\$ 47,867
Medium	461,100	91,759	+3	474,933	105,592
Slow	43,500	11,180	+3	44,805	12,485
	<u>\$870,000</u>	<u>\$158,114</u>		<u>\$877,830</u>	<u>\$165,944</u>
	Present Gross Margin 18.17%			New Gross Margin 18.90%	

We took this example because many operators contend that since fast movers account for so much of dry grocery sales (42 percent in our store) and gross profits (35 percent in our store) there is little that can be done to effect improvements in profits through price changes. As Exhibit 14—Case II shows, the changes just mentioned—assuming for the moment that volume remained unchanged—would widen our store's dry grocery gross margin from 18.17 percent to 18.90 percent. Such a gain would increase the net profits of the entire store by 21 percent. Some operators, taking this kind of approach, have succeeded in increasing their gross margins and at the same time have found that their volumes increased—probably because of favorable consumer reaction to the lower prices on the fast-moving items where sensitivity to prices is likely to be greatest.

We are not suggesting that either of these cases necessarily represents a desirable course of action.

Clearly, there are many specific strategies that each distributor ought to evaluate before deciding on the one or ones that suit his situation best. Thus, the purpose of the two tables in Exhibit 14 is to demonstrate the economic implications of changes in pricing strategy rather than to recommend a particular approach that we believe should be applied.

3. Are you sufficiently localized in your pricing and what practical limitations must you overcome to achieve greater flexibility in setting prices? Are you seriously underpriced in any areas? Can you afford to have the same prices in stores with five direct competitors as you do in those with one or two? Can your present accounting system handle a variety of different price levels? What are the legal aspects of flexibly managing prices on an area-by-area or neighborhood-by-neighborhood basis? Do you have or can you develop qualified people who could make price decisions on a more localized basis? What changes would be required to coordinate price variations among stores with

area-wide advertising or merchandising programs?

4. Can changes in your organization structure help develop greater effectiveness in managing prices? Two examples will illustrate the possibilities:

☞ Distributors might appoint pricing specialists. These specialists, who would combine good analytical capabilities with merchandising know-how, might be given the responsibility for setting prices in, say, 10 stores on all items except advertised specials. The intent would be to develop people who would be on top of prices in the trading areas of their 10 stores.

If we assumed such specialists were paid annual salaries of \$15,000 and were assigned 10 stores of the size and profitability of the representative \$1.5 million unit described earlier in this section, they would need to achieve a net increase in overall price levels of only 1 cent on every \$10 of merchandise sold to cover their compensation. Beyond this, any net gains would be translated directly to the bottom line of the stores' P&Ls. And gains of this magnitude would seem entirely within reason if talented persons were to devote full time to this activity.

☞ As a second organizational possibility, the role of the store supervisor might be reshaped. In many organizations, this job involves the overseeing of five stores; in others the number may range up to 25 stores. The supervisor often concentrates on such functions as cost control, store appearance, personnel matters, checking on promotions, etc. (And when he functions in this way, he is no more than a super store manager.) There is a good possibility that this supervisor's job could be redefined, that the supervisors themselves could be upgraded, and as a consequence greater authority could be delegated to them—perhaps including the latitude to set prices on selected items or categories.

In both of these examples the emphasis is on finding ways to be more *flexible* in pricing at the store level in order to adapt most effectively to the competitive and economic environment in which each store operates. For what could be more special and specific than the competitive environment of a grocery store? Independent operators have shown time and again that they have a powerful weapon

against large chains in their flexibility to meet local conditions in pricing—an edge that progressive chains are working hard to counter.

5. Can you gear prices more closely to costs? Product handling cost can never be the *sole* basis for pricing, but among food distributors, these costs are seldom ever considered. The major reason: a lack of facts on what these costs are. In the present knowledge vacuum, many items, thought to be winners, have costs that at current price levels make them outright losers. In any operation with 30-40 major categories and 5,000 or more items, it seems clear that some must be profitable and others not. The final narrow earnings of a distributor result from these plusses and minuses. But without a greater knowledge of product handling costs, operators are at a real disadvantage in trying to set optimum prices that achieve the right economic balance between competitive conditions, consumer price awareness, and operating costs.

6. What do you know about the price perception of the housewife and her sensitivity to price changes? The answer of most distributors to this question is, "not much." And yet, distributors, especially the larger ones, are well set up to experiment as a means of adding to their understanding of prices, and the effects of price changes on volume. Different pricing strategies and practices can be tested in small numbers of stores in relatively isolated markets without committing the entire company. This kind of research could add greatly to the currently limited knowledge of price/volume relationships and consumer price perception.

We are not proposing that distributors rush out and raise prices or that supermarket operators abandon their carefully established and well-deserved reputation for delivering good value at reasonable prices. As every successful distributor has learned, the public interest is a dominant consideration in any approach to pricing, and those who fail to serve this interest well can seldom prosper over the long term. What we do hope to accomplish through this discussion and particularly through the questions we have posed is to stimulate harder thinking in the trade on pricing, in view of its overwhelming impact on profits.

FOOD DISCOUNTING

No discussion of pricing would be complete with-

EXHIBIT 15

ENORMOUS VOLUMES ARE NEEDED TO MAKE DISCOUNTING PROFITABLE

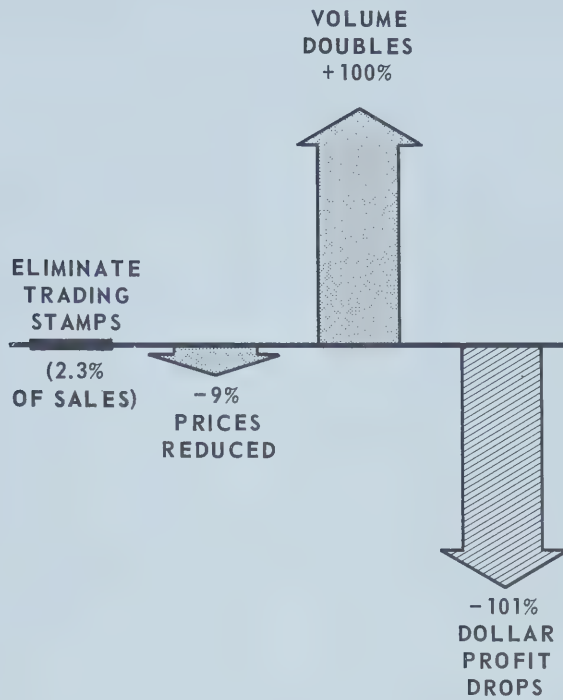
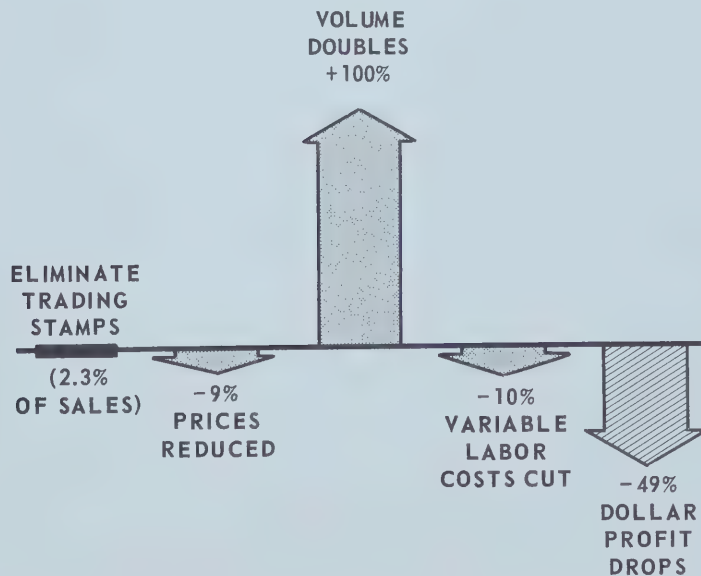


EXHIBIT 16

EVEN WHEN LABOR COSTS ARE REDUCED, DISCOUNTING LEADS TO MARGINAL PROFITS



out some analysis of discount price policies. While food discounters are now well established, their experiences have been sufficiently mixed—including some bankruptcies—to leave some doubt as to their long-term future. And the events of this future may well turn on the basic economics that underlie price discounting.

To develop some insights into these economics, we introduced a fairly typical discounter's policy into our representative store. We eliminated trading stamps (saving 2.3 percent of sales in our store) and assumed *average* price levels would be cut 9 percent. As a consequence, we assumed we could double volume. As Exhibit 15 shows (page 19), all of our store's profits would have been eroded by these conditions, and we would have been faced with a slight loss.

To maintain the same dollar profits that our representative store now enjoys (\$37,500 a year), under these assumptions, volume would have to be pushed to \$3,950,000—an increase of 163 percent. And at this point, the store's profit-to-sales ratio (pretax) would be a razor-thin 0.95 percent.

Clearly, discounting involves more than just the interplay of volume and prices. Even when existing stores are converted to discounting, there are some changes in methods of operation that should lead to labor savings. But in our example these savings would merely reduce the loss; they would not offset

it. As Exhibit 16 shows (page 19), by introducing a reduction of 10 percent in the variable portion of store labor expense into the above equation, we find that the store's dollar profits would still drop 49 percent compared to its original earnings.*

These insights into discounting add up to the following conclusions:

❖ Discounting cannot be the answer to the industry's profit squeeze nor the cure for all sick stores. There simply is not sufficient volume available in a business that already shows signs of having overbuilt to support the kinds of volume jumps needed to make discounting pay off. As we saw, even doubling volume does not necessarily lead to profits.

❖ Because the discounter tends to limit his product line by excluding slow movers, he is cutting prices on products that already tend to have the lowest margins and is missing the chance to benefit from the generous margins of the slower movers.

❖ And, finally, there is the conclusion that food discounting is not something fundamentally new from an economic viewpoint. The physical nature of the operations and hence the underlying structure of costs in discounting are not sufficiently different to result in a new business form—as was the case in moving from service stores to supermarkets.

* At this reduced level, earnings as a percentage of sales would be 0.7 percent.

EXHIBIT 17

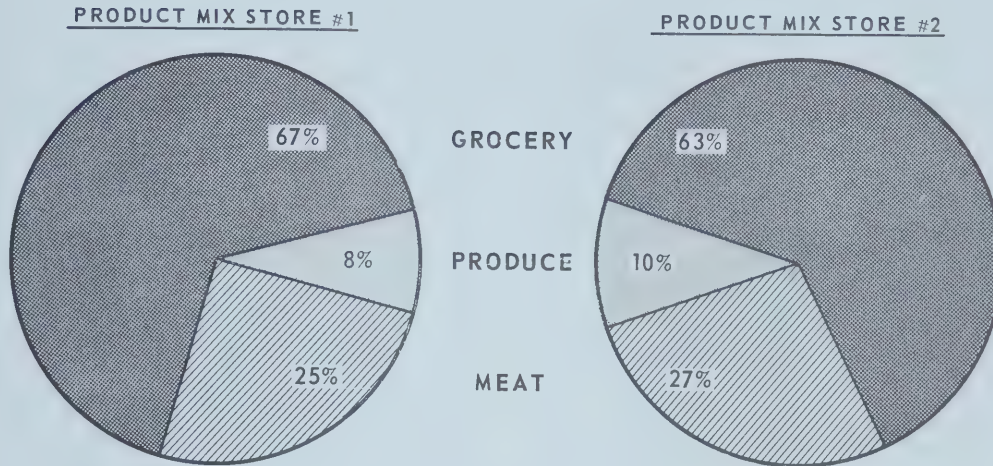
DOUBLING NONFOOD SALES HAS HEALTHY EFFECT ON PROFITS.....

	Store #1		Store #2	
	Sales	Gross Profit	Sales	Gross Profit
Nonfoods (Margin = 31 percent)	\$ 75,000	\$ 23,250	\$150,000	\$ 46,500
Dry Grocery (Margin = 18.2 percent)	870,000	158,340	795,000	144,690
	<u>\$945,000</u>	<u>\$181,590</u>	<u>\$945,000</u>	<u>\$191,190</u>
Increase in Gross Profit	= \$ 9,600			
Percent Gain in Store Profitability	= $\frac{\$ 9,600}{\$37,500^*} = 25\%$			

* Net profits before taxes of representative store—from Exhibit 8.

EXHIBIT 18

VARIATIONS IN MEAT/PRODUCE/GROCERY MIX HAVE LIMITED IMPACT
ON PROFITS



STORE #2 = + \$6,350 ADDITIONAL ANNUAL GROSS PROFIT

There is, of course, a threshold where discount operations can become attractive, and a limited number of operators have found and passed this point. Some of these operators have reclaimed abandoned locations of large chains and through aggressive discount policies have increased volumes 200 percent and more. At such levels their operations have been profitable. But we regard this as a special situation—limited to a few operators in a relatively few locations.

MODIFICATIONS IN PRODUCT MIX

There is hardly a food retailer in the country today who has not attempted to boost his profits by taking on high-margin nonfood items. In fact, if it were not for nonfood sales, the decline in distributor profitability would have been even sharper. In our representative store, nonfoods accounted for 5 per-

cent of total sales—a figure about average for supermarkets across the country—and yielded a fat gross margin of 31 percent versus 22 percent for the store overall and 18.2 percent for dry groceries.

To contrast the profit potential in changing product mix with that of other policy variables, we have developed two test cases for study and analysis. The first deals with increasing nonfood sales, the second with shifting the mix in our store away from groceries and toward meat and produce. While both are hypothetical, they throw considerable light on the economic impact of product mix management.

Doubling Nonfood Sales

If we operate a store identical to our representative unit in all respects except its proportion of nonfoods, and if these nonfoods represented 10 percent of total sales instead of 5 percent, what would be the effect on store profits? Exhibit 17 shows that

such a difference could boost gross profits by \$9,600—which, if it were carried to net, would add 25 percent to store profits.

In this illustration, in order to isolate the effect of the mix change we have held total store sales constant and achieved our increase in nonfood sales at the expense of dry groceries. Since the cost of handling additional nonfood business is not likely to be much different from the cost of handling the displaced dry grocery sales, most if not all of the improvement in gross profit would be reflected in net profit. While this looks to be an attractive opportunity and is obviously the direction being taken by many operators, the practicability of actually doubling nonfood business is probably another matter. Most stores are limited in their space and can ill afford to give up the kind and amount of space required to boost nonfood sales by as much as we have shown. But the example—whatever its feasibility—provides an interesting contrast to another approach to mix management, described in the next section.

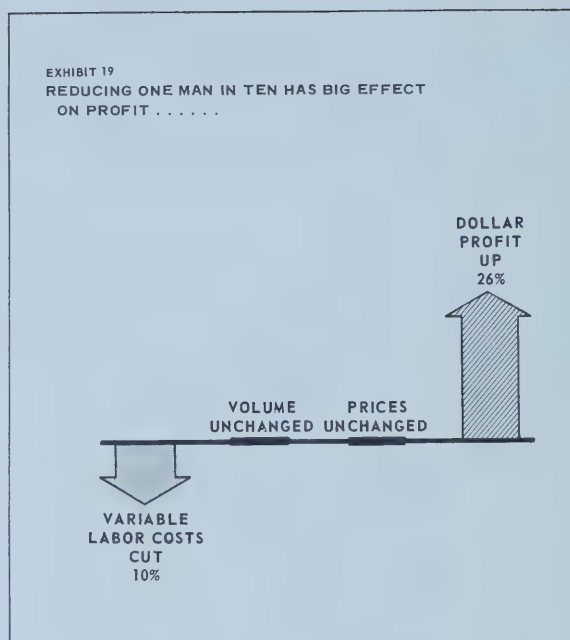
Increasing Meat and Produce Sales

Again using our representative store, we have priced out a change in mix—this one designed to favor meat and produce sales. From Exhibit 11 we learned that groceries currently account for 67 percent of sales, produce 8 percent, and meat 25 percent. If merchandising programs could induce a change in these proportions, what would be the profit significance?

In this case, we have assumed an ability to shift customer demand to higher margin meat and produce products (though again, to isolate the effect of the change in mix, we have kept the total sales of the store at \$1.5 million). If these two categories could be increased as shown in Exhibit 18 (by adding 25 percent to present produce volume and 8 percent to meat volume), the net gain in the store's annual gross profit would be \$6,350. However, when we realize that certain expenses (particularly produce department labor) would increase, we conclude that little, if any, of this gain in gross profit would actually be carried down to net profit. This kind of mix shift is an extremely difficult kind of change to effect, and it also does not appear to be particularly profitable.

* * *

We believe, and we found support for this view



in talking with distributors around the country, that these illustrations confirm the limitations on skillful management of product mix as an avenue to profit improvement in a supermarket. There are definite boundaries to what can be achieved; particularly in shifting sales within the typical product lines of a supermarket (meat, produce, and groceries). This represents a fundamental difficulty of reshaping and influencing consumer demand patterns. Since the final profit of a distributor stems from literally thousands of actions he takes, we would not be so foolish as to write off better product mix management completely. However, in the perspective of the explosive leverage that pricing exerts on profits, changes in product mix appear to be of only secondary importance.

STORE LABOR CONTROL

Any distributor still in business can confirm the overriding importance of carefully controlling store labor expenses. For they represent by far the largest element of cost over which he has any real control. For this reason we wanted to see what the profit effect of an effective expense reduction program would be.

To check this out, we again used our model store, and we found that in this store a 10 percent reduc-

tion in the variable portion of its labor expense would yield a 26 percent increase in profits. This is shown graphically in Exhibit 19.

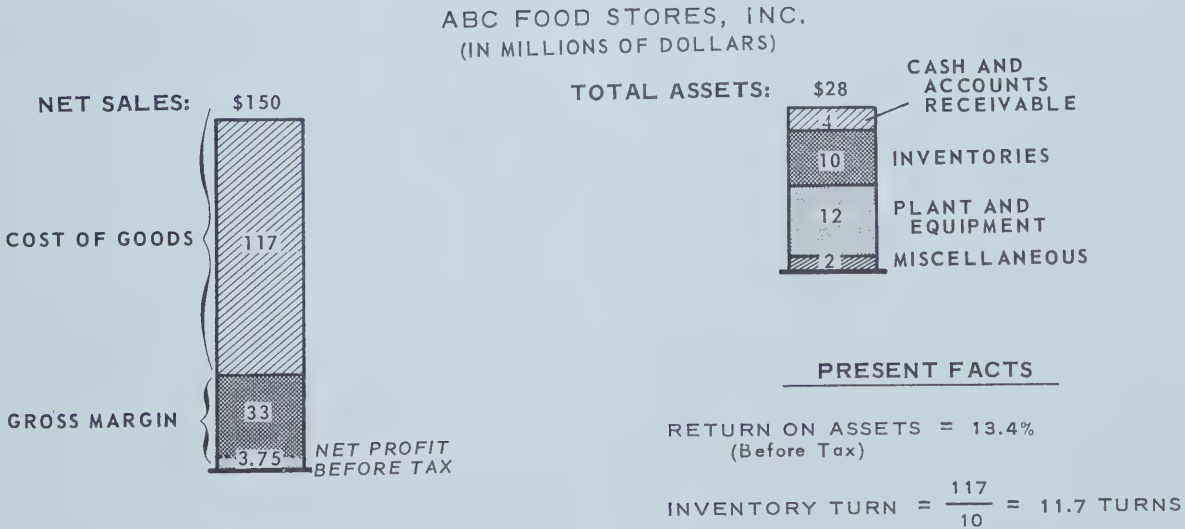
As was the case with price levels, a small change in labor cost exerts an unusual degree of profit leverage. Indeed, there are few industries in this country where a 10 percent cut in the major labor costs would boost corporate profits before taxes by one quarter. And we have found few industries that have entered a mature phase that have not been able to reduce labor costs by at least 10 percent.

While the above figures demonstrate the *opportunity* in effective labor expense control, another set of numbers underscores the *need*. Wage rates have been spiraling upward in food retailing. As we discussed, studies show a 5.8 percent average increase each year over the last 10 years. At the same time, productivity has been increasing but not nearly as fast (2.2 percent a year). The result? In just three years the profits of our representative store could be cut by over one-third simply from this wage-rate/productivity differential. Thus, we have a situation where management action on the part of the distributor is almost mandatory as a

purely defensive move to protect his profit position. And, on the positive side, this need is coupled with an unusual opportunity to enlarge profits through programs to boost productivity. Some of the more profitable distributors in the country have achieved their preeminence by exploiting this opportunity.

Clearly, a manufacturer importantly affects his distributor's labor costs by virtue of the number of products he sells and by how they are packaged and promoted. As we pointed out in our report on chain-manufacturer relations, some "leader" manufacturers are doing a great deal to help distributors reduce or eliminate some of these profit-draining costs. However, there are still many others whose promotions are costly to handle, whose packages or case sizes are too large or extensive, whose deliveries are uncertain, etc. In most of these cases, we believe these manufacturer actions are brought about by lack of knowledge concerning distributor costs and profits—rather than by indifference. Therefore, we are hopeful that this report will underscore the magnitude and importance of this opportunity area in a way that will ultimately help improve profits for both groups.

EXHIBIT 20
INCREASING RETURN ON ASSETS BY REDUCING INVENTORY



INVENTORY MANAGEMENT

All of the policy areas discussed thus far affect the net profit of a distributor. Inventory management—the final issue to be covered in this section—reaches the distributor's pocketbook through its impact on his investment in the business. Thus, to evaluate inventory management, we need to make two departures from the approach we have been using thus far. First, we shall shift from net profit before taxes as an index of profitability to return on assets. Second, we shall examine the effect on return on assets of changes in inventory positions, not for a single store but for a group of 100 stores. Viewing inventories in one store can tell a misleading story. Not only must we give weight to inventories in warehouses, but additionally inventories in a single store are subject to a variety of possibly distorting factors—e.g., size of backroom, frequency of delivery, and location of store.

The 100 stores are all replicas of our representative unit. Exhibit 20 sets forth some basic facts about this group of 100 stores, the ABC Food Company, which earns 13.4 percent on its assets.

If better inventory management—through such avenues as faster manufacturer shipping time and more rigorous, economically based ordering routines—could increase inventory turnover from its present 11.7 times, the changes in profitability for two possible levels of improvement would be as shown in Exhibit 21.

EXHIBIT 21

INCREASING RETURN ON ASSETS BY REDUCING INVENTORY...

Increasing turn to 15 times	
Reduces inventory to:	\$7,800,000
Raises return on assets to:	14.5%
Increasing turn to 21 times	
Reduces inventory to:	\$5,570,000
Raises return on assets to:	15.9%

The profit leverage reflected in this table is somewhat limited, relatively speaking. This stems largely from the already lean asset base on which the typical distributor operates. Because of slim profit margins, distributors have historically been forced to conserve capital. Thus, effecting any kind of improvement in return on investment by attacking the asset base is difficult at best. The cream has already been skimmed off. But attractive opportu-

nities probably do exist in working down inventory levels of slow movers, in working with large suppliers on special programs to speed delivery time and sharpen ordering procedures, in finding ways to limit the size of nonproductive "double" inventories created by deal packs, and in reducing the number of units in a case on items that are very slow movers.

SUMMARY

One thing is abundantly clear from these analyses. To be outstanding, the food retailer must pay attention to *all* the variables that are at work: price, volume, mix, expenses, and investments. Letting one area slip can quickly wipe out the gains from achieving perfection in another—in part, because the profits of food distributors are already so narrow that any changes, up or down, are likely to be significant in relative terms.

But, despite this need for balance, two specific opportunities for food distributors loom large in today's competitive battle. These are pricing and labor expense control. In both cases, we have factors with unusual degrees of profit leverage combined with reasonable possibilities for improvement.

Interestingly enough, these two operating policy issues are where manufacturers and distributors interact to the greatest degree. The interaction is very direct as it affects store labor expense. Almost all in-store functions—unpacking, price marking, shelving and check-out to name the more obvious—are influenced by manufacturer decisions. On pricing, the interaction is more indirect but no less important. Both manufacturer and distributor face conflicting forces. The manufacturer would like to see a low shelf price, in the hope of enhancing his consumer franchise, but he recognizes that a higher price could increase the distributor's interest in selling more of his product. Similarly, the distributor must balance his desire to maintain a healthy gross margin with his recognition that a lower price on some items—or overall—might build volume.

Despite considerable work by distributors to cut costs and to price more effectively, and by manufacturers to help them to do these things, we are convinced that an improvement opportunity of immense proportions still exists. These two key variables of cost and price will receive more attention in the next section of this report.

Product Profitability And Its Application

HAVING LOOKED at several broad influences on distributor profits—store location and size and operating policies—we next wanted to examine how a distributor's earnings are derived from the thousands of individual products he sells. To do this, of course, we needed to know the costs of handling a product. Little practical research has been done on this subject. Thus, we felt that a close look at the actual handling costs of a limited number of items would provide answers to such fundamental questions as these:

- ☞ How big are product-handling costs in relation to the gross profits available to cover them?
- ☞ Do product-handling costs vary significantly from item to item?
- ☞ Do product costs tell us anything different from such traditional measures of product worth as gross margin and gross profit?
- ☞ Would a knowledge of product costs lead to any different decisions in assigning shelf space? In promotions? In evaluating deals? In pricing?

It is often said that food retailing is a “transaction” business. In other words, the important requirement is to earn a profit on each customer's total transaction and not necessarily on the individual products that make up the transaction. Nevertheless, operators can, through their merchandising and pricing skills, influence the size and makeup of the transaction. And, to do this effectively, they need to know the costs and profits of the items that add up to the total transaction.

WHAT WE DID

To make our task of developing cost and profit information manageable, we selected 16 dry grocery products. These were individual brand sizes—e.g., a 1-pound can of regular coffee, a 14-ounce bottle of ketchup. In choosing these items, we attempted to select a good cross section by covering a range of gross margins (the lowest is 6.4 percent, the highest is 34.6 percent); a range of case movements (from over 8 cases per week down to 0.3 cases per week); and a range of physical characteristics (canned goods, bottled goods, small items, bulky items, heavy products, light products, etc.). These items are shown in Exhibit 22 (page 26).

Next, we traced each of the 16 items from its receipt at a distributor's warehouse, through storage to store delivery, and unloading at the store, and through all in-store functions (e.g., price marking, shelving, etc.) until it reached the consumer's shopping bag (Exhibit 23—page 27). In analyzing these activities, we developed cost data by using available operating statistics, by conducting time studies, and by making other special analyses. We also determined movements, sales, and the amount of space occupied by these products in the test store.*

Exhibit 24 (page 28) specifies the activity costs we identified and developed, and introduces some terms we will be using in the remainder of this chapter. As can be seen, this descriptive profit-and-loss statement employs the expression “Direct Pro-

* A more detailed discussion of the approach and methodology used to develop cost data is contained in Appendix A.

EXHIBIT 22

COSTS WERE DEVELOPED FOR THESE 16 PRODUCTS

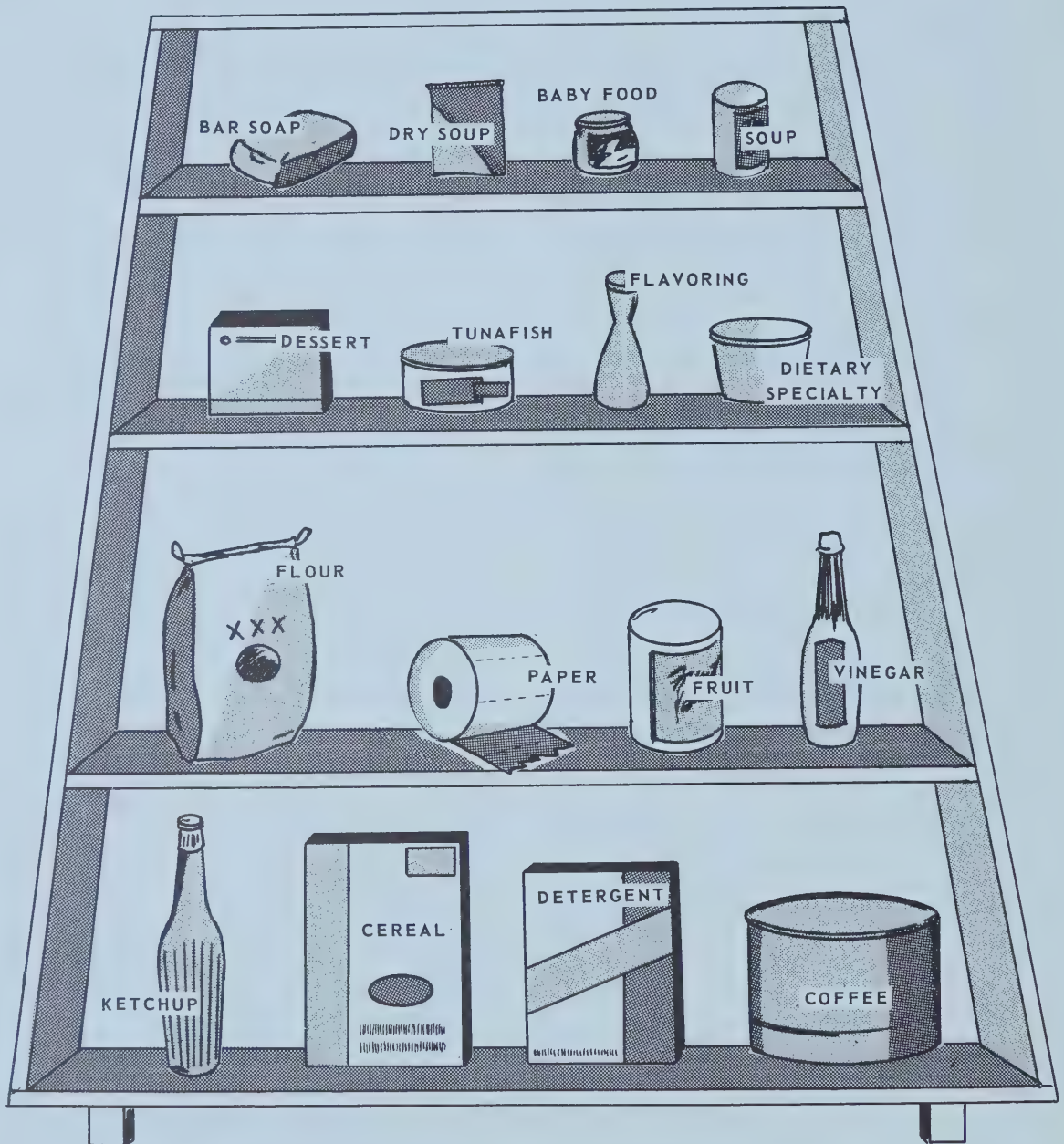
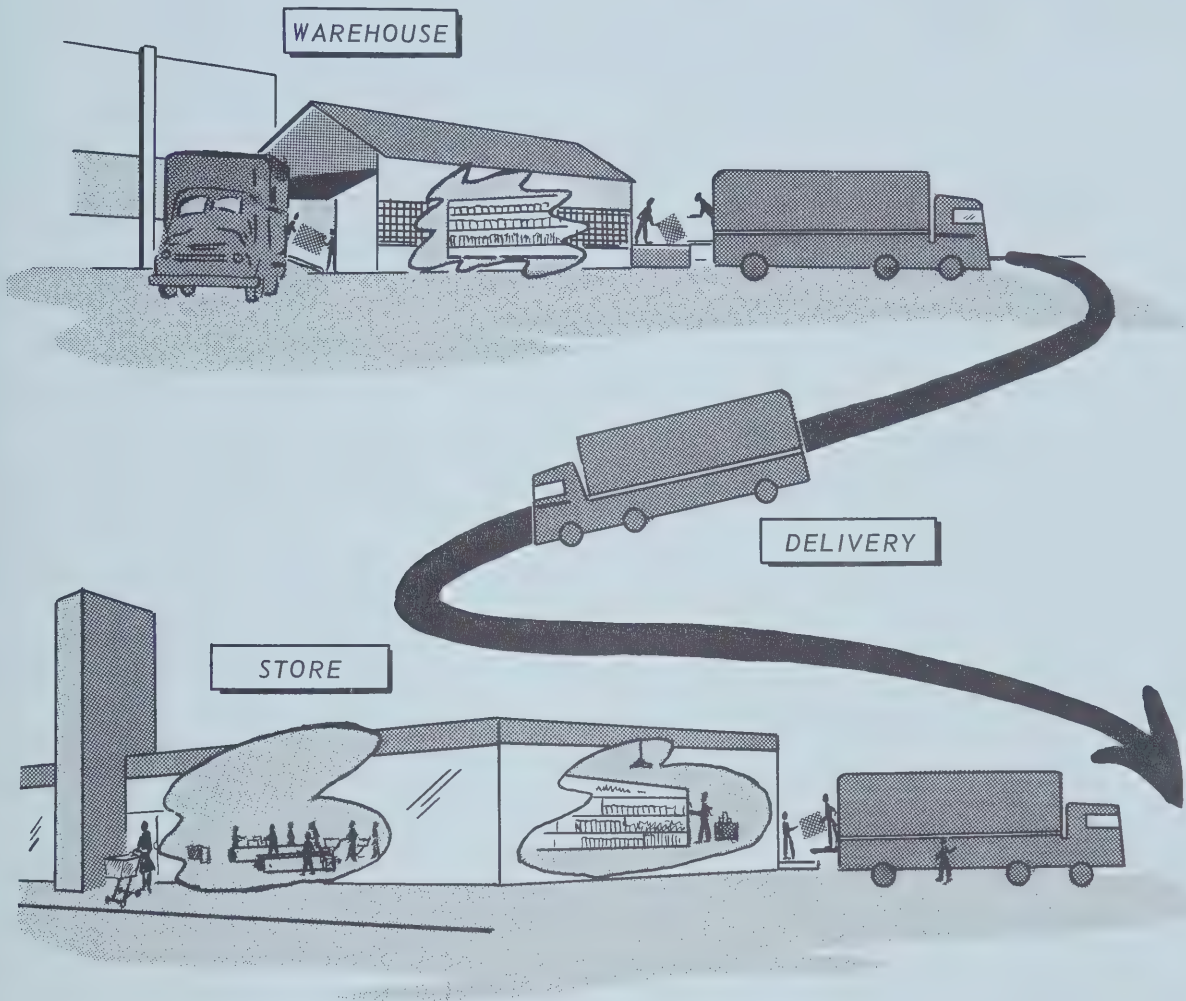


EXHIBIT 23

COSTS WERE DETERMINED AT 3 MAJOR STAGES OF THE FOOD
DISTRIBUTION PROCESS



1. WAREHOUSE COSTS

- a. Receiving
- b. Move to storage
- c. Paperwork
- d. Selecting
- e. Checking
- f. Loading
- g. Space

2. DELIVERY COSTS

3. STORE COSTS

- a. Unload and shelve
- b. Ring up and bag
- c. Space
- d. Stamps

EXHIBIT 24
TERMS WE ARE USING

SALES ▶ *Indicates primary focus.*

Less: Purchase cost of goods

▶ **GROSS PROFIT**

▶ Less: Direct product costs

Warehouse

Delivery

Store—Unload and Shelve

Ring up and Bag

Stamps

Space

▶ Plus: Cash discounts

▶ **DIRECT PRODUCT PROFIT**

Less: Other costs and expenses not directly
allocated to products

Warehouse and store supervision

Field supervision

Certain indirect store labor activities

Corporate and division overhead

(including promotion and advertising
expense)

Plus: Other income (including promotion and
advertising allowances)

NET PROFIT

duct Profit.” Direct Product Profit is the result of subtracting from gross profit those costs that we associated *directly* with an individual item and then adding back cash discounts. Direct Product Profit differs from net profit by the amount of those costs and expenses that we did not directly associate with a specific item. For example, we have made no attempt to assign or allocate warehouse or store supervisory expense to individual items. Moreover, we have excluded certain indirect labor expenses in the store (parking lot porters, for instance) as well as all corporate and divisional overhead.** Nor

** The whole question of cost allocation is discussed in detail in Appendix A.

did we assign advertising and promotion allowances and expenses to individual products. Our reason was that such allowances are often one-time propositions, and the expenses are seldom incurred just to build the volume of one product.

As a consequence of this approach, we have included about two thirds of a distributor's total costs in Direct Product Costs. The remaining one-third are costs like corporate overhead, which in our judgment cannot be properly assigned to an individual item in a given store. Of the costs that we have assigned to individual products, 75-80 percent will vary directly with changes in the volume of the product sold—the major exception being the cost of space both in the store and the warehouse, which is relatively fixed.

In addition to calculating the Direct Product Profit of each of the 16 items, we developed the Direct Product Profit per cubic foot of store space occupied. This index introduces a measurement of return on investment and represents, as we will discuss, a useful yardstick for certain product decisions.*

Before getting into our findings, it is important to take note of the limitations of this analysis. In order to present our findings in practical terms, we have dealt with the actual sales, costs and Direct Product Profits of one specific store and warehouse. We did, of course, verify the validity of these findings in other stores operated by this distributor, as well as with other distributors who cooperated in our study. And during this validation work, we saw that variations in work procedures, wage rates, levels of efficiency, and shelf prices can all affect the Direct Product Profit of an item. Clearly, the actual numbers that will be shown in our exhibits will vary from distributor to distributor in different parts of the country and even for different stores of the same distributor. The impact of these variations is seen in Exhibit 25. Here the Direct Product Profits of five items are compared between two distributors. These distributors, located in different sections of the country, had different shelf prices

* We tested other measures of return on investment: Direct Product Profit per Dollar of Inventory Investment and Direct Product Profit per Dollar of Space Investment, to name two. We also considered linear feet and square feet as possible measures. We made our choice on the basis of achieving ease of measurement and calculation without sacrificing accuracy. A more complete discussion of this entire issue is contained in Appendix A.

for these items; and one had a modestly more productive warehousing operation and a slightly lower stamp cost. As a consequence, their Direct Product Profits are significantly different.

For this reason, it is certainly not appropriate to generalize about a product's profitability from the data that follow. It is perhaps best to think of the

16 items we have selected as representative of dozens of other items in a supermarket. We are convinced, however, that the approach and methodology used in developing these data do have general validity and that the conclusions reached on the use of this kind of information and the feasibility of creating it are thus soundly based.

EXHIBIT 25

SECTIONAL DIFFERENCES CAN AFFECT PRODUCT PROFITABILITY IMPORTANTLY...

	A CEREAL		A COFFEE		A PAPER		A FLOUR		A BABY FOOD	
	CHAIN X	CHAIN Y	CHAIN X	CHAIN Y	CHAIN X	CHAIN Y	CHAIN X	CHAIN Y	CHAIN X	CHAIN Y
Retail Price	39¢	43¢	69¢	67¢	3/40¢	3/43¢	55¢	59¢	9/95¢	9/98¢
Gross Profit	\$104	\$183	\$383	\$280	\$394	\$559	\$135	\$290	\$25	\$34
Direct Product Costs	97	92	184	173	330	318	197	182	36*	26**
Direct Product Profits (Before Cash Discounts)	\$ 7	\$ 91	\$199	\$107	\$ 64	\$241	-\$ 62	\$108	-\$11	\$ 8

NOTE: For comparability, sales, cost, and profit figures are all based on the unit movements and space allocation of Chain X (i.e., on annual basis for a \$60,000-a-week store.)

*Shelved by store personnel.

**Shelved by manufacturer personnel.

EXHIBIT 26

DIRECT PRODUCT COSTS AS A PERCENTAGE OF GROSS PROFIT

PRODUCT (Individual Brand Size)	BULKY CASE GOODS				CANNED GOODS ¹				BOTTLED GOODS ²				SMALL CASE GOODS			
	A Paper	A Cereal	A Detergent	A Flour	A Coffee	A Fruit	A Soup	A Tuna Fish	A Ketchup	A Baby Food	A Flavoring	A Vinegar	A Bar Soap	A Dry Soup	A Dietary Specialty	A Dessert
Gross Profit Dollars ³	\$394	\$104	\$153	\$135	\$383	\$48	\$655	\$76	\$320	\$25	\$104	\$29	\$82	\$50	\$27	\$86
Direct Product Costs:																
Warehouse	9%	12%	10%	27%	6%	9%	3%	3%	6%	19%	3%	10%	2%	5%	3%	4%
Delivery	10	11	10	17	4	4	3	1	5	11	1	7	1	3	1	2
Store:																
Unload, Shelve	12	11	15	25	6	7	9	4	12	42 ⁵	3	13	7	8	7	15
Ring up and Bag	22	19	19	27	11	10	16	8	22	35	4	16	14	15	10	20
Stamps	13	17	23	36	21	13	13	11	12	26	7	10	13	13	9	13
Space	18	22	11	13	1	15	4	4	3	10	1	25	3	7	4	2
Direct Product Costs (Before Cash Discounts) ⁴	84%	93%	89%	145%	49%	58%	48%	31%	60%	144%	18%	82%	40%	51%	33%	56%
Cash Discounts	9	13	18	29	18	9	10	8	8	21	4	7	9	10	6	9
Direct Product Costs (After Cash Discounts) ⁴	75%	80%	70%	116%	31%	49%	39%	23%	51%	123%	14%	75%	31%	41%	27%	47%

¹Includes tins.

²Includes jars.

³Annual basis for a \$60,000-a-week store.

⁴Totals may not agree precisely with sum of individual percentages because of rounding.

⁵Baby food shelved by store personnel.

WHAT WE FOUND

After developing the costs and profits of our 16 items, we established two major findings:

1. The magnitude of Direct Product Costs varies substantially from product to product and with it the Direct Product Profits of the products.

2. Direct Product Profits tell a strikingly different and more accurate story about a product's value than do more traditional measures.

Variations in Costs

Exhibit 26 (page 29) shows the Direct Product Costs and Direct Product Profits for each of the 16 items, expressed as a percentage of the respective annual gross profits of each product in the test store. The products across the top of the chart have been sorted into four categories of physical characteristics. Some of the more marked variations in costs include:

☞ Flour consumes 44 percent of its gross profit in warehousing and transportation—before it even arrives at the store—versus 3 percent for a specialty bar soap.

☞ The baby food uses up 42 percent of its gross profit dollars in being unloaded and shelved at the store; by contrast, the coffee uses only 6 percent.

☞ Space costs range from 22 percent of gross profit for a cereal to 1 percent for a flavoring.

☞ Total Direct Product Costs vary from a high of 123 percent for baby food (an out-of-pocket loss) to a low of 14 percent for the flavoring.

☞ The flavoring and the cereal each have annual gross profits in the test store of \$104. By applying Direct Product Costs to this gross figure, we can see that flavoring brings more than four times as many dollars down to Direct Product Profits as does the cereal.

☞ Similarly, the coffee and ketchup items have about the same gross profits, but the coffee has

EXHIBIT 27

DIRECT PRODUCT COSTS AS A PERCENTAGE OF SALES AND OF GROSS PROFIT

PRODUCT (Individual Brand Size)	BULKY CASE GOODS				CANNED GOODS*				BOTTLED GOODS**				SMALL CASE GOODS			
	A Paper	A Cereal	A Detergent	A Flour	A Coffee	A Fruit	A Soup	A Tuna Fish	A Ketchup	A Baby Food	A Flavoring	A Vinegar	A Bar Soap	A Dry Soup	A Dietary Specialty	A Dessert
(DIRECT PRODUCT COSTS AS A PERCENTAGE OF RETAIL SALES)																
Direct Product Costs:																
Warehouse	1.6%	1.6%	1.1%	1.7%	0.6%	1.6%	0.5%	0.6%	1.2%	1.6%	1.0%	2.1%	0.4%	0.8%	0.6%	0.8%
Delivery	1.8	1.5	1.0	1.1	0.4	0.7	0.5	0.2	1.0	0.9	0.2	1.5	0.2	0.5	0.3	0.4
Store:																
Unload, Shelve	2.1	1.5	1.5	1.6	0.7	1.3	1.6	0.8	2.3	3.7****	1.2	2.8	1.2	1.4	1.6	2.6
Ring up and Bag	3.9	2.6	2.6	1.7	1.2	1.8	2.7	1.7	4.3	3.1	1.4	3.4	2.5	2.6	2.5	3.6
Stamps	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Space	3.2	3.0	1.2	0.8	0.1	2.7	0.7	0.8	0.6	0.9	0.1	5.3	0.4	1.2	0.9	0.4
Total***	15.0%	12.6%	9.6%	9.3%	5.3%	10.4%	8.3%	6.4%	11.6%	12.5%	6.2%	17.5%	7.1%	8.8%	8.2%	10.0%
Plus Cash Discounts	1.6	1.8	1.8	1.9	1.8	1.6	1.7	1.7	1.6	1.8	1.3	1.6	1.7	1.7	1.5	1.6
Direct Product Costs*** (After Cash Discounts)	13.4%	10.8%	7.8%	7.4%	3.5%	8.8%	6.7%	4.8%	9.9%	10.7%	4.9%	15.9%	5.4%	7.2%	6.7%	8.4%
Gross Margin Percentage	17.9%	13.5%	10.1%	6.4%	10.8%	17.9%	17.2%	20.7%	19.4%	8.7%	34.6%	21.3%	17.5%	17.4%	24.7%	17.9%
(DIRECT PRODUCT COSTS AS A PERCENTAGE OF GROSS PROFIT)																
Direct Product Costs (After Cash Discounts)	75%	80%	77%	116%	31%	49%	39%	23%	51%	123%	14%	75%	31%	41%	27%	47%

* Includes tins.

** Includes jars.

*** Totals may not agree precisely with the sum of individual percentages because of rounding.

**** Baby food shelved by store personnel.

EXHIBIT 28
DIRECT PRODUCT COSTS AND PROFITS
(DOLLARS PER CASE)

PRODUCT (Individual Brand Size)	BULKY CASE GOODS				CANNED GOODS*				BOTTLED GOODS**				SMALL CASE GOODS			
	A Paper	A Cereal	A Detergent	A Flour	A Coffee	A Fruit	A Soup	A Tuna Fish	A Ketchup	A Baby Food	A Flavoring	A Vinegar	A Bar Soap	A Dry Soup	A Dietary Specialty	A Dessert
Gross Profit per Case	\$2.39	\$1.26	\$.81	\$.35	\$1.79	\$1.36	\$1.53	\$3.13	\$.86	\$.22	\$2.12	\$.69	\$2.46	\$1.21	\$1.72	\$.88
Direct Product Costs per Case:																
Warehouse	\$.22	\$.16	\$.08	\$.10	\$.09	\$.12	\$.05	\$.09	\$.05	\$.04	\$.04	\$.07	\$.06	\$.06	\$.04	\$.04
Delivery	.24	.14	.08	.06	.06	.06	.05	.04	.05	.02	.01	.05	.03	.03	.02	.02
Store:																
Unload, Shelve	.29	.14	.12	.09	.11	.10	.14	.14	.10	.09	.07	.09****	.17	.10	.11	.13
Ring up and Bag	.53	.24	.21	.10	.20	.14	.25	.24	.19	.08	.08	.11	.35	.18	.17	.18
Stamps	.30	.21	.18	.12	.38	.17	.20	.34	.10	.06	.14	.07	.32	.16	.16	.11
Space	.43	.28	.09	.05	.03	.20	.06	.11	.02	.02	.01	.17	.06	.09	.06	.02
Total***	\$2.00	\$1.17	\$.77	\$.51	\$.86	\$.79	\$.74	\$.96	\$.51	\$.32	\$.36	\$.57	\$.99	\$.61	\$.57	\$.49
Direct Product Profits per Case (Before Cash Discount)	\$.39	\$.09	\$.04	\$ (.16)	\$.93	\$.57	\$.79	\$2.17	\$.35	\$ (.10)	\$1.76	\$.12	\$1.47	\$.60	\$1.15	\$.39
Direct Product Profits per Case (After Cash Discount)	\$.61	\$.25	\$.18	\$ (.06)	\$1.23	\$.69	\$.94	\$2.41	\$.42	\$ (.05)	\$1.84	\$.18	\$1.70	\$.71	\$1.26	\$.47

*Includes tins.

**Includes jars.

***Totals may not add precisely because of rounding.

****Baby food shelved by store personnel.

more than one and one-half times the Direct Product Profit dollars of the ketchup.

To put these data into more conventional terms, Exhibit 27 shows Direct Product Costs expressed as percentages of net sales. And again, several striking variations are apparent:

☞ The Direct Product Costs range from 15.9 percent of sales for vinegar down to 3.5 percent of sales for coffee.

☞ The soup and the dietary specialty each has Direct Product Costs (after cash discounts) of 6.7 percent. But soup's margin is 17.2 percent and that of the dietary specialty is 24.7 percent. Thus, the amount of Direct Product Profit of the two items varies significantly.

☞ The paper and dessert each has a margin of 17.9 percent. But paper's Direct Product Costs (after cash discounts) are 13.4 percent and the dessert's are only 8.4 percent. Thus, their real profit-

ability is considerably different than their identical margins might suggest.

To show the variations in actual physical terms, Exhibit 28 reduces all data to a dollars-per-case basis. Again the extreme variations are obvious, and in this chart the gross-profit-per-case differences as well as the cost differences are apparent. For example:

☞ Warehousing and delivery costs are \$0.30 per case for the cereal against \$0.06 per case for the dessert.

☞ Paper's space cost is \$0.43 per case versus \$0.02 per case for the ketchup.

☞ Baby food's total case costs at \$0.32 are the lowest of the 16 items; but its low gross profit makes the item a loser in our test store.

☞ On the other hand, paper's case costs are the highest at \$2.00, but the Direct Product Profits of \$0.61 per case are nearly as great as those on the

canned fruit (\$0.69 per case), which has far lower costs, owing to differences in gross profit.

Exhibit 29 dramatizes the variations in costs and gross profits (and raises questions about their predictability) by showing five products that have descending gross profits per case and ascending Direct Product Costs per case.

Questioning the Traditional Measures

In our judgment, Direct Product Profit information tells a significantly different and more accurate story about the worth of a product than do the traditional measures of value: gross margin; gross profit; and, more recently, gross profit per unit of space. The reason for the different story is simply the wide and often unpredictable variations between the handling costs of individual products that have just been dramatized.

To illustrate this second major finding, we developed three exhibits that, we believe, raise fundamental questions about the accuracy of the traditional measures. In Exhibit 30 four items are shown with varying gross margins but all within a range of 4 percent (17.5 percent–21.3 percent). The Direct Product Profits, however, differ by a factor of 3 to 1 (5.3 percent–15.9 percent). And these variations in profits are entirely unpredictable by an ex-

amination of the margins alone.

Gross profit can also be a misleading index. Exhibit 31 compares four different items in terms of gross profit dollars and Direct Profit dollars. The wide differences are obvious. The poorest item in terms of Direct Profit dollars, flour, scores well on gross profit dollars. By contrast, the packaged dessert and detergent, with nearly equal Direct Product Profits, show up differently from each other in terms of gross profits.

Many recent trade studies have measured product worth on the basis of gross profit per some unit of space. It is our view that even this index, while better than gross margin or gross profit, can be deceptive. In Exhibit 32 (page 34), four products in our test store were found to have generally declining gross profits per cubic foot and ascending Direct Product Profits per Cubic Foot. The latter measure, which reflects direct handling costs for the items, is to us a more accurate yardstick.

Thus we conclude that, if a distributor is going to measure profits by any yardstick, Direct Product Profits is more accurate than any of the current measures. For Direct Product Profits strikes a practical balance between net profit (which is relatively meaningless for individual products) and gross profit (which ignores operating costs).

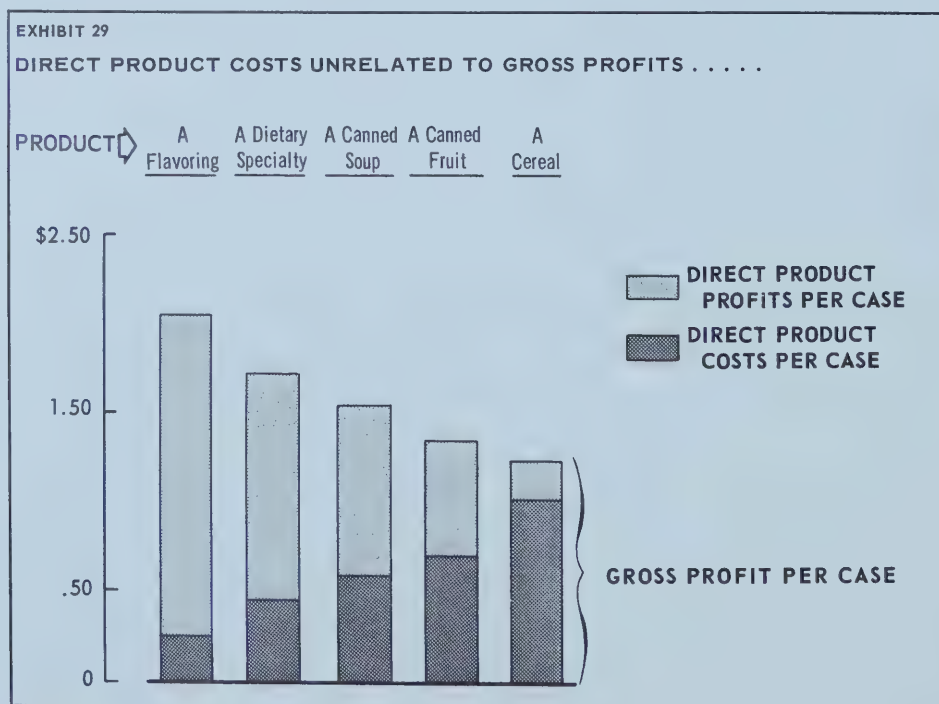


EXHIBIT 30

MARGIN PERCENTAGE NOT A RELIABLE INDICATOR OF PROFITABILITY

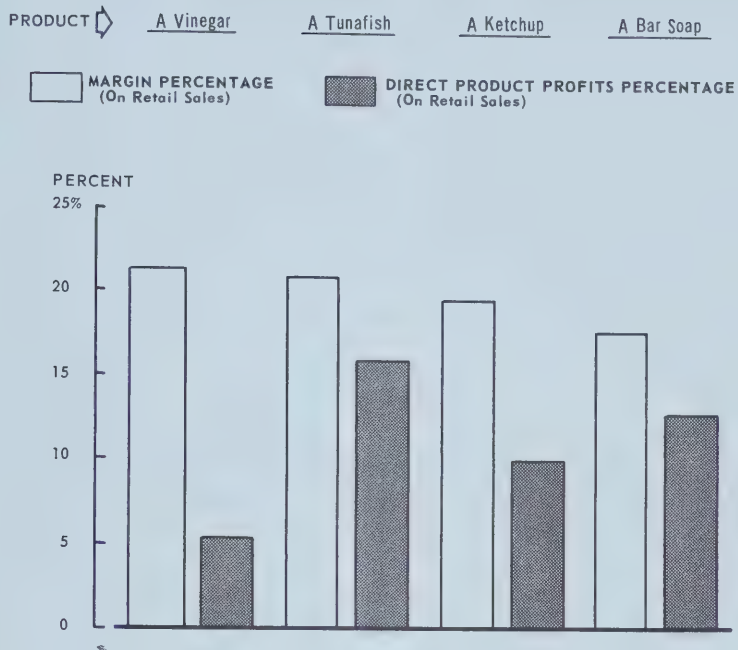
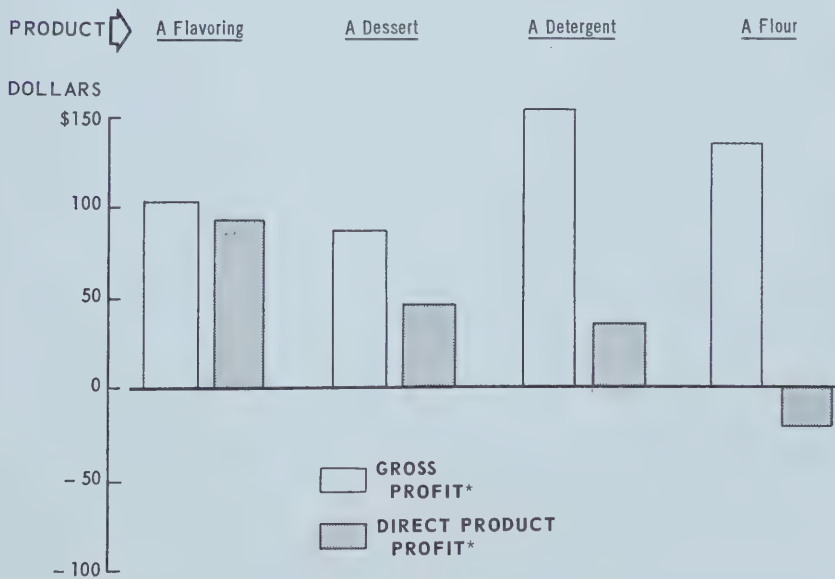


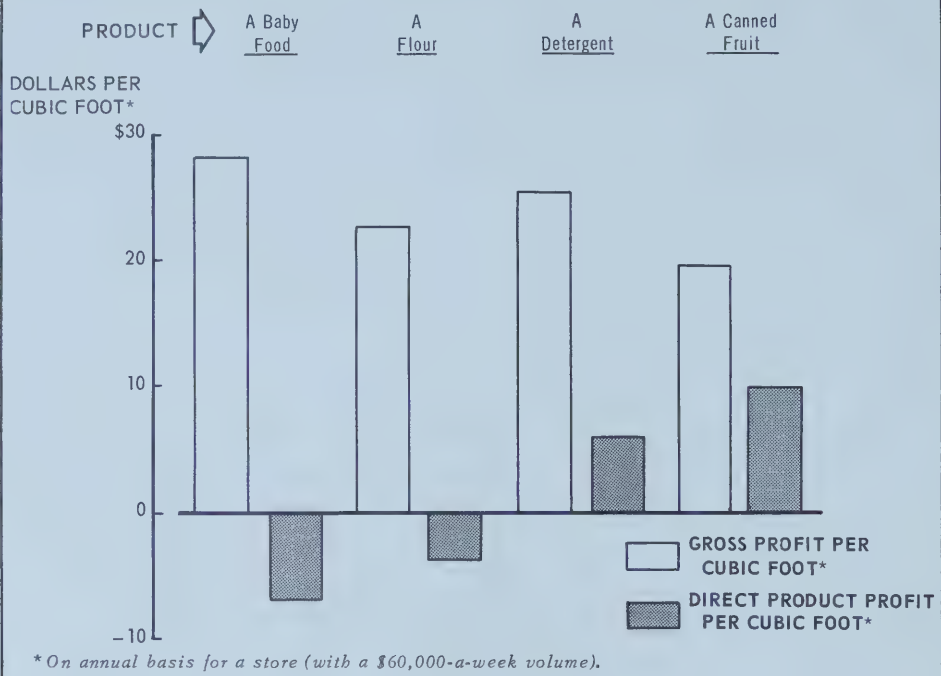
EXHIBIT 31

GROSS PROFIT NOT A RELIABLE INDICATOR OF DIRECT PRODUCT PROFIT



* Profit data on annual basis for one store (with \$60,000-a-week volume).

EXHIBIT 32
GROSS PROFIT PER CUBIC FOOT NOT A RELIABLE INDICATOR
OF PROFITABILITY



USING DIRECT PRODUCT PROFITABILITY INFORMATION

Unless the kind of direct product profitability data we have been discussing has important applications, our analyses and even our findings are, of course, merely academic exercises. However, on the basis of a number of discussions with trade executives, we believe there are three significant uses to which this kind of information can be put. These are:

1. Providing a basis for distributors and manufacturers to work together more productively
2. Giving distributors an additional tool for making a variety of merchandising decisions more effectively
3. Establishing a needed information base for a distributor's own cost-reduction activities.

Distributor-Manufacturer Relations

In fostering more and better cooperation between distributors and manufacturers, a knowledge of Direct Product Costs can help to identify high-cost products or activities that are susceptible to improvement through joint action. Such possibi-

ties might include work on package size, on case size, on case and package design, or on delivery methods.

- ☞ For example, on package size there might be opportunities for denser products, tighter fills, or compression packaging. To illustrate the impact of compression packaging: If, among the 16 test products, the cereal package size could be cut by one-third (without reducing its weight or retail price), its Direct Product Profit per Cubic Foot would *more than double*.
- ☞ With respect to case size, knowing Direct Product Costs will permit the manufacturer to balance more realistically the handling economies of a larger case against the cost of space and the movement of a product.
- ☞ In case and package design, cost data will allow a determination of the economic implications of quick opening devices for the case, tray packs, fewer or more layers within a case, changes in package design to facilitate price marking, etc. At present, many such improve-

ments are disregarded, probably because their value to the distributor has no dollar sign attached.

☞ On delivery methods, faster schedules or palletized rail receipts can both be "costed out" with better information. Savings on the receipt of rail shipments in palletized form run between 1 and 2 cents per case. In many warehouses, savings could run up to \$30,000 or more annually if 50 percent (instead of 5 percent, as at present) of the rail receipts came in palletized.

Product profitability data can also further distributor-manufacturer actions aimed at improving distributor profitability through means other than cost reduction. For example, profitability information would importantly supplement research-gathered data on movements, facings, etc., in developing shelving plans, or testing display methods and locations, or conducting category profit studies.

And finally, profitability information could lead to more cooperation between distributors and manufacturers on new products and promotions. By achieving a better knowledge of a distributor's costs and how they behave, manufacturers should be able to shape their deals to win greater trade acceptance.

Also an understanding of product costs and profits could (and should) materially affect manufacturers' sales strategies and programs. And, our experience in working with a number of grocery manufacturers' sales forces leads us to believe that knowledge such as this will help them become more effective in dealing with distributors and in developing sales presentations that have real impact.

Better Merchandising Decisions

The second broad use for direct profitability data lies in helping food distributors to make better merchandising decisions. Three examples will help to illustrate this use:

☞ Knowledge of Direct Product Profits can be especially helpful in improving space management.* In order to do this, however, it is nec-

* It would, of course, be naive to contend that a distributor can increase his profits by indefinitely expanding the shelf space on his high profit items. There are obviously severe limits, for example, on how much flavoring he can sell. Likewise, he would be ill-advised to hide or discontinue his loss items. Between these two extremes, however, we believe the distributor can influence the movement of products sold by skillful space management. And since most successful retailers are doing this all the time, we believe that they can gain by using Direct Product Profits per unit of shelf space since this provides a more realistic picture of true profitability than other yardsticks.

EXHIBIT 33
DIRECT PRODUCT PROFITS PER CUBIC FOOT
A Useful Tool for Space Management

PRODUCT (Individual Brand Size)	BULKY CASE GOODS				CANNED GOODS ¹				BOTTLED GOODS ²				SMALL CASE GOODS			
	A Paper	A Cereal	A Detergent	A Flour	A Coffee	A Fruit	A Soup	A Tuna Fish	A Ketchup	A Baby Food	A Flavoring	A Vinegar	A Bar Soap	A Dry Soup	A Dietary Specialty	A Dessert
(ANNUAL BASIS FOR A \$60,000-A-WEEK STORE)																
Gross Profit ³	\$394	\$104	\$153	\$135	\$383	\$48	\$655	\$76	\$320	\$25	\$104	\$29	\$82	\$50	\$27	\$86
Direct Product Costs ^{3,4}	\$294	\$ 83	\$119	\$157	\$121	\$24	\$253	\$18	\$165	\$31	\$ 14	\$22	\$25	\$21	\$ 7	\$40
Direct Product Profits ³	\$100	\$ 21	\$ 34	\$(22)	\$262	\$24	\$402	\$58	\$155	\$(6)	\$ 90	\$ 7	\$57	\$29	\$20	\$46
Cubic Feet ⁵	23.88	7.94	5.98	6.04	2.47	2.45	8.30	.89	3.21	.90	.18	2.42	.72	1.22	.34	1.04
Direct Product Profits per Cubic Foot ³	\$4	\$3	\$6	\$(4)	\$106	\$10	\$48	\$65	\$48	\$(7)	\$500	\$3	\$79	\$24	\$59	\$44

¹ Includes tins.

² Includes jars.

³ On annual basis for store (with a \$60,000-a-week volume). Figures rounded to nearest dollar.

⁴ The Direct Product Costs shown on this Exhibit are derived from the data in Exhibits 26, 27, and 28, and hence include space costs. For space management purposes, these space costs could be eliminated since they are \$3/cubic foot for all products in the Dry Grocery Department.

⁵ Cubic feet of shelf space in a store with 13,000 square feet of sales area.

essary to relate the Direct Product Profit of a product to the space it occupies. In this manner we in effect calculate a return on investment for each item. In Exhibit 33, we have derived the Direct Product Profit per Cubic Foot for each of our 16 products. We can readily see the tremendous swing: from —\$7 per cubic foot to \$500 per cubic foot. As might be expected, the bulky items all come out on the low side. By contrast those products that require little space look much better. A study of this exhibit raises some real questions about the effectiveness of space allocation in our test store.

- Coffee and canned fruit take up about the same shelf space, yet in this case coffee returns more than 10 times the Direct Product Profit per Cubic foot. Vinegar also has approximately the same space, but yields only 1/35 of the “return on investment” of coffee.
 - Does the cereal require its nearly 8 cubic feet of space in view of its low —\$3 —return per cubic foot? The same question could be asked of the 6 cubic feet for flour which actually loses money for the store.
 - In laying out the soap and detergent section, would it not be useful to know that while the bar soap item produces only half as many gross profit dollars, its Direct Product Profit dollars are almost twice as great (\$57 to \$34) and its return per unit of space is more than 13 times as great?
- ☞ Consider the question of the worth of slow movers. Exhibit 34 shows that some slow-moving items can be just as profitable as prod-

ucts with many times the movement—particularly when space has been intelligently assigned to these slow movers. On the other hand, on categories that may be either unprofitable or only marginally profitable, Direct Product Profit data could naturally lead to decisions to drop third- or fourth-position brands whose movement was sluggish.

- ☞ The problem of which products to feature is another merchandising decision that we believe can be made better with Direct Product Profit information. If a distributor must choose between two items, Y and Z, which he regards as having about the same traffic-building capacity when they are sold at a reduced price, knowledge of direct costs becomes pivotal in making the best decision. As Exhibit 35 shows (page 37), the operator would be out of pocket an additional \$100, or 60 percent more, if he featured Z instead of Y.

Despite these very practical merchandising applications of Direct Product Profit information, the sophisticated reader will recognize two important qualifications:

First, Direct Product Profit data, while often helpful, are not needed for all merchandising decisions. For example, in allocating space to specific brands and kinds of soups—once the total space for the soup category is set—one need only consider gross profits per unit of space (provided handling costs for all soups are similar). Of course, where handling costs differ, Direct Product Costs need to be known.

Second, Direct Product Profit data are only part of the total information needed for many decisions. Thus, profitability data can be helpful in:

EXHIBIT 34

SLOW MOVERS CAN BE PROFITABLE...

	Fast Moving Products		Slow Moving Products	
	A Dessert	A Canned Soup	A Dietary Specialty	A Flavoring
Weekly Unit Movement	90	396	7	11
Weekly Gross Profit	\$1.66	\$12.60	\$.52	\$ 2.00
Weekly Direct Product Profits per Cubic Foot	\$.85	\$.93	\$1.11	\$ 9.62

EXHIBIT 35**DIRECT PRODUCT PROFITS CAN HELP MAKE BETTER ADVERTISING DECISIONS...**

	PRODUCT Y		PRODUCT Z	
	Normal Price Period	Feature Price Period	Normal Price Period	Feature Price Period
Unit Price	\$.30	\$.27	\$.40	\$.36
Unit Sales	5,000	10,000	5,000	10,000
Dollar Sales	\$1,500	\$2,700	\$2,000	\$3,600
Gross Profit*	\$ 300	\$ 300	\$ 400	\$ 400
Direct Product Cost**	\$ 150	\$ 300	\$ 250	\$ 500
Direct Product Profit	\$ 150	0	\$ 150	-\$ 100
Change in Profit Due to Feature Price Cut		-\$ 150		-\$ 250

*Based on margin of 20 percent at normal price.

**At \$.03 a unit for Product Y and \$.05 a unit for Product Z.

- (1) Deciding what items to carry—but in addition the distributor has to know something about consumer demand and competitors' practices
- (2) Setting shelf prices—but one must also consider competitors' prices, price/volume relationships, and consumer price-awareness
- (3) Allocating shelf space—but weight must also be given to economical stocking procedures and space/movement relationships
- (4) Deciding on products to feature or display—but estimates must be made of traffic-building potential of items and likely sales volume increases
- (5) Evaluating deals—but one must also know the special handling costs involved and estimate movement changes by item and category.

He learns about the costs of warehouse and store functions in considerable detail. For example, the warehouse costs shown in Exhibits 26, 27, and 28 earlier in this chapter were built up by analyzing seven elements and activities:

- Receiving
- Move to storage
- Paper work
- Selecting
- Checking
- Loading
- Space

When one studies costs in this depth, two important by-products are derived:

1. The distributor learns more about how costs behave, i.e., what makes them increase or decrease. He learns that with small items, like bar soap or packaged desserts, shelving and check-out costs must be attacked. On large items, like paper and cereals, conserving space is a key problem. Some costs are a function of hours worked, others of units handled; still others exist regardless of how much work is done.

2. One cannot help developing some informed judgments on the efficiency of warehouse and store activities through the process of building Direct Product Costs. For example, in studying the check-out function of our test store and developing standards to apply in generating Direct Product Costs, we were unable to account for over 20 percent of

Point of Departure for Cost Reduction

With the slim earnings generated by food distributors, constant attention to boosting productivity and reducing costs must be a way of life. Through the development of Direct Product Profit data, a distributor provides himself with a vast storehouse of information that should prove helpful in targeting his own internal cost-reduction efforts. This is the third major use of Direct Product Profit data.

the time spent on this activity. This “missing” time represented the extent of idleness among check-out personnel that resulted from the manning schedules of our store. (Studies by others have disclosed up to 40 percent idle time in the check-out function.) While some cushion is clearly required in this kind of activity, this indicator points to the real opportunity for better scheduling procedures for check-out personnel or perhaps for better supervision to permit the immediate redeployment of unneeded check-out clerks to other store tasks. And observing the practices of low-cost operators confirms that this is how they do it.

IS IT PRACTICAL?

If usefulness is one important test of the real value of Direct Product Profit data, then feasibility represents the second major hurdle. For we may still be living in a dream world if the development of this kind of information is not both “doable” and affordable. Many earlier approaches to product costing have run into the problems of fanciful allocations, and time and expense of the effort. But, for a whole set of reasons, we are convinced that the concept of Direct Product Profit discussed in this report is a reality within the grasp of virtually all distributors.

First, to simplify the job of developing Direct Product Profit information, one of two steps can be taken. Either the products in a supermarket can be grouped into families with similar handling characteristics, which would reduce the task from 5,000 items to, say, 100 families; *or* a formula can be developed for the calculation of Direct Product Costs on the basis of a knowledge of such variables as case size and number of units in a case. Either of these approaches can yield sufficient accuracy so that the usefulness of the data is in no way impaired. (A discussion of an actual product cost formula is contained in Appendix B. Using this formula we have extended our calculations of Direct Product Profits to over 200 additional items, specifically to validate the formula itself, and generally to gain further insights into the usefulness

and application of these methods.)

Second, this kind of information need not be generated frequently. Such data are not like store sales, which distributors need to know weekly and sometimes daily. They are unlike P&L data, which are usually on a monthly cycle. Rather, Direct Product Costs need only be updated when work methods (and thus productivity levels) change or when wage rates are modified. Thus, once established, Direct Product Costs would typically be updated on an annual (or even less frequent) basis.

Third, Direct Product Cost need not be developed for each store. Like products, stores could be grouped — without sacrificing accuracy — probably into fewer than 10 size/efficiency categories.

Fourth, Direct Product Profit data are not required for all decisions. This fact does not lessen the task of developing the information, but it does limit somewhat the number of people who need to have such information and who have to understand it and the basis on which it is generated.

Finally, the methodology required to create Direct Product Profit information is relatively straightforward. Many of the techniques of data gathering are based on conventional industrial engineering approaches. Manufacturing businesses with only \$10 million in sales have applied such thinking with real sophistication in developing standard costs for thousands of parts, and Direct Product Costs are like standard costs in many ways. In many distributor organizations, one or two competent persons could go a long way in developing such a system of information, drawing on operating and accounting personnel for part-time assistance. Even in the largest chains, two or three men would be sufficient to create, and one or two men adequate to maintain, a system of Direct Product Profit information.

For these reasons we believe that knowledge of Direct Product Profits is no longer a blue-sky whim based on unproven theories. Instead, it is an attainable reality with substantial benefits for improving distributor operations. We have recently learned of several operators who have begun systematic studies of product-handling costs in their own companies.

A Look Ahead

FOOD DISTRIBUTION is a highly complex business. The factors affecting profits are almost countless; the relationships between them are intricate. While planning for new stores is vitally important, so is pricing, controlling labor expense and making superior merchandising decisions. Pinning down the degree to which these salient management functions influence profits is difficult.

The fact that profits are the result of these numerous and interacting forces helps to make food distribution one of the country's fastest moving businesses. The time between decisions and results is as short as in any industry with which we are familiar. Actions taken today literally govern tomorrow's profits. And the very slimness of distributor profit margins magnifies the profit impact of each management action.

These unique conditions define the fundamental economics of this industry and hence shape its management problems. Simply being aware of these forces, however, is clearly not enough. Measuring them and determining more exactly their impact on profits is what is needed to take the appropriate action. In presenting this report, it has been our objective to cast some of these problems and requirements in a new light—a more exact light—so that better decisions can be made by better informed executives.

TOMORROW'S SUCCESSFUL DISTRIBUTOR

Nothing in this report detracts from the continuing requirement that every successful distributor must meet—the task of serving consumers more effec-

tively. For this is the heart of any consumer-oriented business such as food retailing.

On the other hand, it seems clear to us that tomorrow's successful distributor will need to balance his experience and judgment with more reliance on the analytical tools of management. In such key areas as pricing, space management, and improvement of labor productivity, quantitative and analytical methods are likely to make a major contribution. Moreover, in looking behind the results of the consistently fine profit producers in the grocery distributor industry, it is apparent that these companies are taking just these steps. None of them is satisfied that they have yet found all the answers—or that they ever will—but all of them with whom we talked freely admit that this type of quantitative analysis is a central feature of their success; and most will add that in the future they plan to rely even more heavily on these techniques and approaches.

We also believe that there is a good possibility that distributors will have to make major organizational changes in the future. As he seeks greater flexibility to respond to local competitive situations and as he seeks greater efficiency of operation, the successful distributor is likely to raise questions about: the number and size of field divisions, the integration of the buying and store operations functions, the role of the store supervisor, the increased use of skilled analytical personnel, and improved management of the pricing function. Issues such as these immediately raise the prospect of modifications in organization structure and philosophy.

As these changes take place among the distributors, manufacturers will find themselves dealing

with a far more sophisticated customer. Quite possibly he will not respond to traditional appeals, nor is he likely to accept opinions instead of facts. As a result, manufacturers may well need to revise their own marketing programs and methods. The role of the salesman, the kind of person he needs to be, the sales approach he uses, and the type of organization in which he fits may all need to be rethought and redefined.

Since these changes among distributors will not take place overnight, the manufacturer still has some lead time. But it is apparent, to us at least, that major sales advantages can accrue to the progressive suppliers—that is, the ones who learn more about the distributor's profitability on their products and then act on this knowledge to reshape their promotions, packaging, merchandising methods, and even sales organizations.

WHAT ABOUT "NEXT MONDAY MORNING"

In any action-oriented business—such as food distribution—managers are bound to ask of a study such as this, "What specifically should I do about it?" The answer, of course, will vary widely from one company to another. This is an industry report. By its very nature, it can only supply techniques and approaches which will form the basis for individual action.

Thus, the real challenge of this study—to distributors and manufacturers alike—is to translate its approaches and its fundamentals into action in their own particular business. The findings and conclu-

sions we have presented have no practical value until they are applied to a specific company. For the distributor this means studying this report, and relating it to his own operations, as a basis for:

- ❧ Challenging his present approach to store development

- ❧ Raising questions about and rethinking his key policies in such areas as pricing, inventory management, and labor expense control

- ❧ Asking his organization to consider the application of Direct Product Costs to their efforts to merchandise and handle individual items more effectively.

It is this process of adapting principles to his own business—rather than attempting to use the specific data that we have presented—that will separate the distributor who benefits from this study from those who will not.

Similarly, the sophisticated manufacturer top executive will be able to find a number of applications of this material within his own organization. In some cases, his actions can be drawn directly from the report, as we have discussed earlier. In other instances, he will need to consider undertaking additional research targeted more directly toward his products or problems. But, just as with the distributors, the manufacturer who looks to this study to give him universal answers—applicable to all situations—is going to get little value from it.

So, in a very real sense, what to do about this report "next Monday morning" is up to the individual reader. If we have stimulated him to even raise this question, this report will have served its fundamental purpose.

Appendix A

A Summary Of What We Did To Develop Direct Product Costs And Profits

This appendix describes the methodology that we applied in developing Direct Product Costs and Direct Product Profits. This work was carried out primarily in one warehouse and several stores of one chain. Detailed verifications were made in one other chain and more general reviews of this work were made with several other distributors. We also compared our work to and drew upon other studies of food distributor costs.

Our work in the development of Direct Product Costs and Profits began with the selection of 16 dry grocery products, each an individual item, i.e., individual brand size. As described in Chapter 4 of the report, we chose these items so as to cover a representative range of gross margin percentages, case movements, and physical characteristics.

Having selected these items, the work of developing Direct Product Costs and Direct Product Profits divided into three major areas:

1. How we determined Direct Product Costs
2. How we calculated Direct Product Profits
3. How and why we determined Direct Product Profits per Cubic Foot.

DIRECT PRODUCT COSTS

The development of Direct Product Costs involved four major steps.

1. First, working with expense reports of the participating chains, we identified every type and element of cost incurred in the chain. Warehouse direct labor expense, truck gasoline expense, store heating expense, store labor expense are examples of cost elements identified.

2. Next we broke down direct labor expense in the store and warehouse into the individual activities that make up the whole. For example, warehouse direct labor was further divided into that for railcar unloading, truck unloading, fork trucking, selecting, loading, checking, etc.

3. We then examined the nature of each cost element and each labor activity to determine whether or not it met four criteria for inclusion as a Direct Product Cost.* These criteria were:

- (a) Can the cost of the element or activity be directly associated with the individual products? For example, loading wage costs and trading stamp costs can be directly associated with individual products, but supervisor's wages or general store cleanup cannot be (unless you get involved in some arbitrary allocations).
- (b) Does the cost vary directly with physical volume? The labor costs of opening cases, price marking, and shelving an item are examples of costs that do vary with volume. Handling 1,000 cases takes twice as long and costs twice as much as 500 cases of the same product mix. So these activity costs are included in Direct Product Costs. The time of the head cashier and the store manager, however, does not change with changes in the volume of any given product or product category, so the cost of their time is not a Direct Product Cost. The one exception we made to the criteria of cost variability was space cost. For most store operators space costs are largely (if not wholly) a fixed cost. However, we have chosen to include space costs in our Direct Product Costs because their inclusion in our judgment gives one a better overall view of a product's real worth. Because we have included space costs, our Direct Product Costs are not what the theoretical economist or professional accountant would consider marginal costs. And in many decision-making applications the use of marginal costs (which our Direct Product Costs would be if space costs were deducted) may be both more correct in principle and more sound in practice.
- (c) Is the cost large enough to have any importance and to make a difference with respect to different items? If warehouse volume is 10 million cases a year, a particular warehouse cost of \$1,000 a year would amount on the average to only \$.0001 per

* The cost elements and activities included and excluded from Direct Product Costs are shown in the table on page 42.

DIRECT PRODUCT COSTS FOR SELECTED DRY GROCERY PRODUCTS

INCLUDED IN DIRECT PRODUCT COSTS		EXCLUDED FROM DIRECT PRODUCT COSTS	
WAREHOUSE			
LABOR: Receiving – Rail and Truck Transfer to storage – Tow train and Fork truck Selecting Clerical (<i>handling of store orders</i>) Checking, Loading Salvage, Baling SPACE: Rent, Depreciation Utilities Supplies Maintenance, Repairs (<i>plant</i>) Property taxes, Insurance OTHER EXPENSE: Maintenance, Repairs (<i>equipment</i>)		LABOR: Supervision Cafeteria Watchmen Janitors Maintaining grounds Cigarette stamping expense (<i>and income</i>)* Frozen food warehousing and delivery* OTHER EXPENSE: Truck detention, Rail demurrage charges Product losses All expense of corporate headquarters operations (<i>mentioned below in more detail</i>)	
DELIVERY			
LABOR: Drivers OTHER EXPENSE: Gasoline, Oil, Tires Repairs, Maintenance Taxes, Insurance Depreciation Supplies, Expense		LABOR: Dispatching OTHER EXPENSE: Garage depreciation Maintenance, Repairs to garage	
STORE			
LABOR: Unloading Transfer to shelf Opening cases, Price marking Shelving product Disposing of empty cases Policing shelf (<i>while shelving product</i>) Checkout SPACE: Rent (<i>dry grocery portion only</i>) Depreciation, Amortization (<i>dry grocery portion</i>) Utilities (<i>dry grocery area only</i>) Repairs, Maintenance** (<i>dry grocery area only</i>) Store expense (<i>partial</i>) OTHER EXPENSE: Stamps Wrapping supplies (<i>dry grocery portion only</i>)		LABOR: Managers; Store, Grocery, Meat, Produce Head cashier Changing prices (e.g., <i>for specials</i>) Ordering merchandise General cleaning up of whole store Time spent dealing with salesmen and customers Building displays Taking inventory and policing backroom Double handling of merchandise (<i>owing to temporary conditions</i>) Armored car service SPACE: Rent (<i>meat, produce, and frozen foods</i>)* Depreciation, Amortization (<i>meat, produce, and frozen foods</i>)* Utilities (<i>meat, produce, and frozen foods</i>)* Repairs, Maintenance (<i>meat, produce, and frozen foods</i>)* Store expense (<i>partial</i>) OTHER EXPENSE: Promotion expense Advertising expense	
CORPORATE			
Cash discounts		Buying, Merchandising, Accounting Management, Division, Field Supervision Promotion and Advertising (<i>offset by special allowance income</i>) Other corporate and division expenses (e.g., <i>rent, depreciation, utilities, etc.</i>) Cost or interest on inventory investment**	

*Excluded only because not applicable to our selected products.

**We did not include the imputed cost of the capital invested in inventory in our Direct Product Costs for two reasons. First, it is normally not an actual cash cost; second, it is quite small for our 16 items (ranging from 1¢ to 3¢ per case). Therefore, it would not have any significant effect on our end figures. And trade executives with whom we discussed this question unanimously felt it would complicate the issue rather than help their understanding if this cost was included.

There are, however, circumstances in which the inclusion of this cost is quite appropriate. For example, in comparing the profitability of two products or product categories requiring the distributor to carry different inventories, the cost of carrying these inventories would be an important consideration.

case and might be excluded on the basis that any conceivable decision could not depend on whether or not a cost of this size were included in Direct Product Costs.

- (d) Does the cost exist on an ongoing, consistent basis, rather than being incurred from time to time? We did not include costs incurred in building displays of a product, for example. Nor, did we include the offsetting allowances that the manufacturer might grant for such performance. Our goal was to develop a set of Direct Product Costs that represented "standard" costs. That is, costs that represent the normal activities and expenses routinely and always a part of handling the product.

4. Having applied the four criteria to determine what cost elements and activities should be included in Direct Product Costs, the next step was to determine both the magnitude of each cost and how it varies among individual products. This we did by conducting timed observations of activities, analyzing financial data and nonfinancial operating statistics and studies, and discussing with operating supervision the nature and size of these costs. From such data and discussions we determined, for example, the average railcar unloading rate in cases per man-hour, and that the time and cost involved in unloading a rail car depended not only on the number of cases handled but on the number of pallets needed for the cases being off-loaded. That is, 1,000 cases of a product stored 20 cases to the pallet would normally take longer to unload than 1,000 cases of product stored 72 cases to a pallet because more pallets (and more time to handle them) would be needed in the former situation. In this way, we learned not only what time and cost were involved in unloading our particular products, but by knowing the number of cases and how many cases were stored on a pallet, we could check one product against another to be sure that our samples of operating data and timed observations were representative of actual conditions and that we were accurately reflecting the unloading time differences among items.

Costs for other labor activities were developed in a similar manner, and stamp costs were assigned to individual items based on a fixed percentage of the retail sales value of each item.

Developing store space costs required a somewhat different method of assignment to items. We first determined total store occupancy costs, such as rent, depreciation, amortization, utilities (excluding that for refrigeration since we were only dealing with dry groceries), and repairs and maintenance. These were the costs that varied not with volume, but more with the size of the store and hence could be considered space costs. The next step was to determine how much of the total store occupancy costs were properly assignable to the dry grocery department. Rent, heat, and light expenses were assigned on the basis of the proportion of

square footage of selling area occupied by dry groceries. Assignments of depreciation, amortization, and maintenance expense were based on equipment records and on multiple judgments of ourselves and chain personnel. Having thus developed the occupancy costs for the total dry grocery area, we next measured the cubic footage of dry grocery gondolas. Dividing the dry grocery occupancy costs by the total cubic feet of gondola display space gave us an annual cost per cubic foot of about \$3.00.

When considering homogeneous display space such as that in dry grocery gondolas, the *cost* per cubic foot is the same for every cubic foot of space in the gondolas. This, of course, does not mean that the *value* of every cubic foot is the same. Some locations will produce more sales, and therefore more profits than other locations of the same size. The cost of other space, e.g., frozen food cabinets and meat cases, will differ from that of dry grocery space, naturally. And it is possible that the *value* of one location in a frozen food cabinet may be different from that of another location in the cabinet. But within the cabinet the *cost* of every cubic foot of space is the same.

DIRECT PRODUCT PROFITS

Having developed Direct Product Costs for our 16 items, the next step was to use these costs to determine Direct Product Profits. This was done in three steps:

1. We first determined the annual physical movements of each item. From store order records we developed the actual case movement for a 26-week period covering winter and spring months. We multiplied this data by two to develop annual movement; we also used warehouse movement records for a whole year to make adjustments to several seasonal products to better reflect actual annual store movement.

2. We then determined the retail price and the purchase cost of each item, reviewing records over several months so that the retail price and purchase cost we used were representative. This information allowed us to determine retail sales per case and per year in our test store, as well as gross profit per case, gross profit per year, and the gross margin percentage for each item.

3. We subtracted the Direct Product Costs for each item from its Gross Profit and added back an appropriate amount for cash discounts earned to arrive at its Direct Product Profits. In this way, we arrived at a profit figure that represents not net profit, but the profit that is left after paying the manufacturer and covering handling and stamp costs. It is the profit available to defray other costs and expenses like corporate overhead and supervisory salaries, and provide net profit.

DIRECT PRODUCT PROFITS PER CUBIC FOOT

Since store space management is both an important aspect of generating profits and a current topic of interest to dis-

tributors, we searched for a measure that would be useful for this purpose.

It is our belief that the idea of expressing Direct Product Profits per some unit of space provides such a useful tool for management of space. We also believe that whether the unit of space used is linear feet, square feet, or cubic feet is not as important as the fact that some unit of space is used.

Nonetheless, linear feet and square feet have limitations that led us to use cubic feet as the unit of space we would work with. Linear feet does not recognize the height or depth of the grocery gondola. A product taking up two linear feet of space on a bottom shelf may take up as much as two or three times the volume of space as two linear feet on an upper shelf. Square feet has the same limitation in that it does not accurately reflect shelf spaces of different heights. We chose to use cubic feet to eliminate these limitations.

The actual calculation of Direct Product Profits per Cubic Foot of shelf space was done in two simple steps.

1. We measured the height, depth, and length of the shelf space assigned to each product and converted these measurements into cubic feet of space.

2. We divided the annual Direct Product Profits of each product by its cubic feet of shelf space to arrive at the Direct Product Profits per Cubic Foot.

Direct Product Profits per Cubic Foot thus represents a quasi return-on-investment measure. That is, cubic feet is a measure of investment in facilities and, in an indirect sense, even a measure of the amount of inventory on the store shelf. As a result, Direct Product Profits per Cubic Foot indicates how well space (one aspect of investment) is being used and how much profit is being returned.

We also investigated the use of other measures. For example, we calculated the Direct Product Profits per Dollar of Store Inventory Investment, and Direct Product Profit per Dollar of Facilities Investment. One problem with these—and any set of measures—is that the work load involved in developing additional measures is usually great and the incremental benefits from developing each additional measure become smaller. An additional problem in developing a measure that took into account facilities investment in dollars centered around the fact that some stores are rented, some owned, and the dollar investment would differ considerably from store to store.

We are not concluding that measures other than Direct Product Profits per Cubic Foot are not meaningful or useful. But we did select Direct Product Profits per Cubic Foot as being the one measure that would be the most useful for the amount of work involved for a distributor in its generation and use.

Appendix B

A Direct Product Cost Formula

The purpose of this appendix is to describe a formula that we developed during the course of this study for calculating Direct Product Costs—which in turn makes it possible to determine Direct Product Profits. In presenting this material we will cover:

1. How the formula was developed
2. The formula itself
3. How the formula might be applied.

Before getting into these three topics, however, it is of vital importance to spell out with great emphasis the limitations of the specific formula that will be subsequently described. This cost formula was established to represent the conditions in one of the distributor organizations with whom we worked. More particularly, it applies to a particular warehouse and to one type of store.

The coefficients and terms in the formula accurately reflect, we believe, the present work methods, wage rates, and levels of efficiency of the operations we were studying. *Similar* formulas *can* be developed to mirror the actual conditions of other operators. But it would be a mistake, and possibly a dangerous one, for a distributor—without substantial analysis and adaptation—to apply this particular formula to his own company. Such a general purpose model was not our intent; and we have included this discussion of the formula in our report only to illustrate the approach to its development and to show what a completed formula would look like. To minimize the possibility of attempts to apply this formula in an unwise manner, we have used hypothetical numbers in the statement of the formula, though these figures *are* based on our actual data.

HOW THE FORMULA WAS DEVELOPED

As we analyzed distributor costs, it became apparent that certain physical characteristics were the dominant reasons for the differences in costs that we noted among products. These characteristics included such factors as size of the case, weight of the case, number of cases typically stored on a pallet, etc. Distributor costs—such as unloading at the warehouse, delivery to store, and price marking in the store, to cite a few—are all functions of these kinds of physical characteristics. We reasoned that if factors such as these gave rise to the costs that a distributor incurred, it should

be possible to deduce from a reasonable sample of actual product handling cost information a formula that would permit the calculation of the costs of other products simply by “plugging in” the appropriate values of the controlling physical characteristics. The formula would include a term for each factor that influenced costs and each term would have a numerical coefficient that would be dependent on certain operating characteristics of the operation under study.

THE FORMULA ITSELF

The resultant formula for the distributor with whom we worked is as follows:

DIRECT PRODUCT COSTS PER CASE

$$\begin{aligned} &= (\$.085 \times \text{cubic feet in case}) + (\$.257 \times \text{hundred-weights in case}) \\ &+ (\$.082 \text{ per case}^*) + (\$.004 \times \text{units per case}) \\ &+ (\$.003 \times \text{ring ups in case}) + (\$.317 \div \text{cases on pallet}) \\ &+ (\$.010 \div \text{cases in typical store order}) + (\$.020 \times \text{retail sales value of case}) \\ &+ (\$.65 \times \text{cubic feet of warehouse space per case sold}) \\ &+ (\$3.000 \times \text{cubic feet of store space per case sold}) \end{aligned}$$

* Truck receipt at warehouse. Different coefficients exist if receipts are by rail and if they are palletized.

(Note: The numbers in the formula are illustrative. They are not the actual numbers we used.)

By determining all of the characteristics for a particular product that are included in the formula, by multiplying or dividing these values as indicated in the formula, and by then adding all the factors together, the Direct Product Costs for one case for the given product will have been calculated—expressed in dollars and cents.

Some of the terms in the formula represent entire elements of cost. For example, the “\$.020 x retail sales value of case” factor introduces the complete trading stamp cost for a product; the “\$3.000 x cubic feet of store space per case” factor represents the total cost of store space of a case of a particular product.

On the other hand, costs such as unloading at the warehouse are built up by *parts* of several terms in the formula, e.g., part of the "\$.085 x cubic feet in case" factor, part of the "\$.257 x hundredweights in case" factor, part of the "\$.082 per case" factor, and part of the "\$.317 ÷ cases on pallet" factor all contribute to the total warehouse cost. A similar kind of buildup (but with different terms) results in the price marking and shelving cost. Thus, the particular numerical coefficients for some of the terms in the formula are established by analyzing in detail the actual activity costs of specific products. We validated the coefficients thus determined by calculating with the formula the Direct Product Costs of certain products and then checking these "derived" costs with actual costs determined by analysis of operating data and engineered time studies (as described in Appendix A).

In order to keep the formula manageable, we have eliminated factors that generate costs (or cost differences among products) so small as to be only fractions of a cent per case. Thus, the formula we have presented is not an *absolutely precise* instrument for developing Direct Product Costs. But the checks that we have made comparing formula costs to those costs determined by much more detailed time studies show close agreement. In our opinion, the formula will yield Direct Product Costs accurate to within plus or minus 10 percent of true cost on products whose costs are over \$.50 a case and within plus or minus 15 percent for those with smaller costs. Considering the wide variation in Direct

Product Costs per case (from \$.32 to \$2.00 in our 16 product sample alone) and the fact that even detailed engineering time studies are not likely to yield accuracy much finer than plus or minus 5 percent, we believe that such formulas will provide more-than-adequate accuracy.

HOW THE FORMULA MIGHT BE APPLIED

While the formula may on first glance appear formidable, it offers a rapid short cut in the calculation of Direct Product Costs for thousands of items. Determination of the terms and coefficients to be used requires studying 15-30 products in detail. Once the formula is developed, the needed physical data for each product can be obtained, usually from readily available facts. It should be a relatively easy matter for those distributors who use computers to program them to make the actual calculations of Direct Product Costs. If this were done, it would then be possible to print out such data on monthly or quarterly movement and inventory reports. In this manner, the cost data would be available in a form that would permit its ready use in merchandising decisions.

In a similar manner, it might be possible to request the requisite physical data for use in the formula from manufacturers when they submit New Product forms. The costs thus calculated for a new product could then be related to possible shelf prices for the item and the resultant profits of the new product would then be available for study during the product selection process.

